

WHAT ARE WE FIGHTING FOR? ISSUES, DIVISIBILITY, AND CONFLICT

DYNAMICS

by

DOUGLAS BRYAN ATKINSON

(Under the Direction of Andrew P. Owsiak)

ABSTRACT

The bargaining model of war assumes that two states compete over an issue. In the model, each side is assumed to be willing to pay a certain fixed price to obtain the issue under dispute and has fixed level of capabilities to achieve these objectives. Because the conflicts are costly, states will desire to end their conflicts as soon as possible, suggesting that once they know the likely outcome of the conflict, they will divide the issue along these lines. States are kept from ending their conflicts by one of three problems. Either states are unable to effectively communicate the price they are willing to pay and the capabilities that they possess to obtain the issue—the information problem—, they are concerned that a future shift in capabilities will render any agreement reached in the present ineffectual—the commitment problem—, or the issue over which the states are competing over cannot be divided—the problem of an indivisible issue (Fearon 1995). In this dissertation, I argue, that while Fearon is correct to assert that an agreement over an indivisible issue can be reached through the introduction of a side payment, this does not mean that the presence of an indivisible issue(s) is unproblematic for the bargaining process. Indivisible issues can still impede the ability of states to come to a conflict-ending agreement. Specifically, I suggest

that scholars must consider more than just the divisibility of an issue, but scholars should also consider the value of the issue. As the value of the issue under dispute increases, the more difficult it will be for the state to find, or be willing to offer, an appropriate side-payment. This suggests that the more valuable the indivisible issue under dispute, the more difficult it will be to overcome the problems associated with issue indivisibility. I apply these insights to the study of war and territorial dispute duration as well as exploring the role of highly salient indivisible issues as a means of sending a costly signal of resolve

INDEX WORDS: War, Conflict, War Duration, Termination, Signaling, Resolve, Territorial Conflicts, Conflict Duration, Strategy

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DEDICATION

This dissertation is dedicated to Tressa, Logan, and Mara. I will be forever thankful for your love and support.

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CHAPTER 1

INTRODUCTION

The issues that states compete over matter. They shape the manner by which countries compete and subsequently when and where they compete. The variation in issue type and its accompanying characteristics affect rates of violence, attempts at peace, and the kind of endings that states can accept. Although at face value, this assertion seems obvious, the role of issues has gone underexplored in many approaches to the study of international relations. In this dissertation, I contend that this inattention limits our knowledge of a whole host of international processes. The neglect to the effect of the issues under dispute is most pronounced in the bargaining model (Fearon 1995), the dominant approach to the study of international conflict.

The bargaining model of war assumes that two states compete over an issue. In the model, each side is assumed to be willing to pay a certain fixed price to obtain the issue under dispute and has a set level of capabilities to achieve these objectives. Because the conflicts are costly, states will desire to end their conflicts as soon as possible, suggesting that once they know the likely outcome of the conflict, they will divide the issue along these lines. States are kept from ending their conflicts by one of three problems. Either states are unable to effectively communicate the price they are willing to pay and the capabilities that they possess to obtain the issue—the information problem—, they are concerned that a future shift in capabilities will render any agreement reached in the present ineffectual—the commitment problem—, or the issue over which the states are competing over cannot be divided—the problem of an indivisible issue (Fearon 1995).

Scholars of international relations most often develop bargaining models of interstate conflict that hold constant the divisibility of the issues under dispute. This usually entails the scholar assuming that the territory is divisible (Fearon 1995, Powell 2006). Because the issue is held constant in these models, the issue cannot explain variation in the outcomes and durations of various bargaining processes both within and across cases. Scholars have justified their inattention to the role that the difference in issue type has on the bargaining process by suggesting that even if the issues under dispute are indivisible, this is unproblematic. For example, the most prominent theorist in this approach argues that there are very few issues, perceived as indivisible, that cannot be resolved through the inclusion of some side payment (Fearon 1995).

In this dissertation, I argue, that while Fearon is correct to assert that an agreement over an indivisible issue can be reached through the introduction of a side payment, this does not mean that the presence of an indivisible issue(s) is unproblematic for the bargaining process. Indivisible issues can still impede the ability of states to come to a conflict-ending agreement. Specifically, I suggest that scholars must consider more than just the divisibility of an issue, but scholars should also consider the value of the issue. As the value of the issue under dispute increases, the more difficult it will be for the state to find, or be willing to offer, an appropriate side-payment. This suggests that the more valuable the indivisible issue under dispute, the more difficult it will be to overcome the problems associated with issue indivisibility. To compound this, since states are rarely disputing over only one issue—instead often disputing over multiple issues simultaneously—it is necessary to consider the effect of all of the issues under dispute. Ultimately, I contend that to understand the role of issues in the bargaining process it is essential to jointly consider the issues salience (value) as well as its divisibility of all of the issues simultaneously.

Whether a single issue can be divided is binary; it is either divisible or indivisible. An issue is indivisible if it cannot be divided without the divided object losing the value that it possessed—the classic example of this is King Solomon's determination that the best way to settle the competing mothers' claims was to split the contested baby in half. Alternatively, socially constructed values may be added to previously divisible issues to make them indivisible. As previous scholars have pointed out, issues are rarely physically indivisible but are more commonly the product of socially constructed values shared by a large proportion of a state's domestic population and as such would lose its value if divided (Fearon 1995, Toft 2006, Goddard 2010). A simple rule that can be used to decipher between divisible and indivisible issues, as they are commonly found in international relations, is by determining whether or not the issue can be divided without the issue losing the values attached to it by the disputants.

The salience of an issue is often defined as “the degree of importance attached to the issue by the actors involved” (Diehl 1992, p. 332). I take this definition one step further by suggesting that to understand issue salience, it is also essential to assess the number of people that can and do value the issue. Ultimately, I determine salience by determining the number of people who possess (or will possess) the values attached to the issue and the intensity with which they desire to possess or maintain possession, of these issues. The best means of assessing the number of people that an issue will benefit is by determining whether an issue is a rival or a non-rival good. A non-rival good is a good in which one person's consumption of the good does not affect the ability of others to consume the good. On the other hand, rival goods are those where another person's use of the good will limit the ability of others to consume the good (Olson 2009). Since more people can partake of non-rival goods without diminishing its value, more people will often desire to possess or maintain possession of non-rival goods. To clear, in this context the concern is whether or not

an issue is rival or non-rival within the borders of a state and not whether the issue is rival or non-rival between states or among states.

The effect determines the intensity with which these values are held (or the number of values that they possess) that it will have on the day-to-day lives of those affected by losses or gains of the values attached to the issues. The effect can be the product of psychological gains or losses, material gains or losses, or both. This suggests that the loss of socially constructed indivisible issues such as religion, ideology, or national honor might not physically affect the day to day lives of a nation's population, but may have a dramatic impact on the day-to-day psyche of those affected by the loss, ultimately having the same effect.

The more valuable the indivisible issue, the more difficult it will be for the states to find a conflict-ending agreement. To demonstrate this, let us briefly consider the logic of disputes over an indivisible issue. Indivisible issues cannot be divided, meaning that competitions over these issues are winner-take-all. When the issues under dispute are winner-take-all, conflict-ending agreements will be difficult to reach. This difficulty stems from the fact that any conflict-ending agreement will require one state to sacrifice all of the values attached to the issue. In the scenario described above, states will have incentives to continue the conflict until one side reaches the limits of its resolve. To further demonstrate this logic, consider the following: A country will always have a higher expected utility, $E(u)$, for continuing to dispute the territory than conceding the territory: since $E(u) = (\text{probability of success} \times \text{value of issue}) - \text{costs}$, it will always be higher than the utility of a concession, $u = 0 - \text{costs}$, until the costs of the dispute exceed the state's resolve.. This suggests that at any point the expected utility of a state continuing the fight will be higher than sacrificing the issue at which point the state will obtain a utility of 0 or negative utility. This logic will hold until the point that the costs of the conflict reach the limits of a state's resolve.

At this point, a state will be better off conceding the issue as the costs will exceed the value that the state placed on the issue.

Because states desire to pay as few costs as possible, they will seek to avoid scenarios wherein they are forced to pay costs that approach the limits of their resolve. To avoid this scenario, the state will try to introduce a bargaining range through the inclusion of a side-payment of equal value to the difference between the limits of the states resolve and the costs they have paid up to that point. However, as the value of the indivisible issue increases the more difficult, it will be for one side to offer a bargaining range creating concessionary side payment. Subsequently, the more valuable the indivisible issue, the more problematic the presence of an indivisible issue becomes, as the more unlikely or unwilling a belligerent will be to introduce the necessary side-payment. The effect that the presence of indivisible issues will have on these phenomena will vary based upon whether possession of the invisible issue under dispute is desired by the target or desired to be maintained by the target.

I extend this argument to offer explanations for various phenomenon that fall within the study of international conflict. Specifically, I suggest that considering the salience and divisibility of the issues under dispute will help scholars to understand wartime strategy selection, duration, and war-ending outcomes. Further, I argue that states can add indivisible issues to those already under dispute, for strategic effect. More specifically, states will use the inclusion of highly salient indivisible issues as a means of sending a costly signal of resolve. I describe each chapter in more detail below.

Structure of Dissertation

In chapter 2, I argue that to understand war duration and termination better, scholars should consider the multidimensionality (salience and divisibility) of all issues under dispute. I propose a

theory of the role that the issues under dispute play in the warfighting process. I argue that the effect that the total divisibility of the issues will have on war duration depends upon the total divisibility of not only the belligerent's issues but that of their opponent and whether they are acting as the target or the initiator. To test this theory, I develop a new continuous measure that can account for the salience and divisibility of all of the issues under dispute. To operationalize my measure, I update and expand on Holsti's (1991) issues data. I test my argument using data from all interstate wars from 1817-2007. I find strong statistical support for my argument across all of my tests.

In chapter 3, I argue that states will manipulate the disputed issues to send a clear signal of their resolve. The signaling state hopes that by revealing information regarding its resolve, it will end the war in a manner favorable to the signaling state. Specifically, I suggest that states will add highly salient indivisible issues. The addition of highly salient indivisible issues to the issues already under dispute changes the types of outcomes that the state can accept.¹ Because indivisible issues are winner-take-all, their inclusion makes a war that could have ended in a negotiated settlement, into a war where a negotiated settlement is not possible. This allows a leader to tie her hands, thus allowing the state to distinguish itself from a non-resolved state.

Since signaling using highly salient indivisible issues has the potential of being extraordinarily costly, states will be hesitant to use indivisible issues as a means of signaling. I suggest that before a country will be willing to send a signal of resolve employing highly salient indivisible issues three necessary conditions must be met: 1) The state is highly resolved, but its opponents doubt its resolve. 2) The availability of highly salient indivisible issues to attach to the

¹ I define an indivisible issue as an issue that actors cannot divide without the issue losing its value. An indivisible issue can be either physically indivisible or indivisible because of socially constructed values (Toft 2005).

issues already under dispute 3) The state is currently restrained from signaling its resolve on the battlefield but desires to signal that it will be able to use its latent military capabilities to bring the war to an end in the future successfully.

The theoretical assertions and the subsequent analysis developed in this paper can offer insights into a number long-held and perplexing questions regarding wartime behavior. This research is the first step and suggests a more thorough examination of issue manipulation across all wars over time to find if my theory can explain wartime signaling more generally. I analyze my theory with an in-depth case study of Britain during the First World War process tracing techniques. I identify two points in the war, late September 1914 and January 1918, where I contend that the British intended to signal their resolve through the addition of highly salient. Finally, I will conclude with suggestions for future research and provide some policy recommendations derived from my findings.

In chapter 4, I explore how the role of issue salience and divisibility effect the duration of territorial conflicts.

Scholars doing research along these lines have gone further, to account for the wide variation within territorial disputes and the likelihood that they will end in conflict, suggesting that issues vary along two dimensions, salience, and tangibility, and that this variation in salience and tangibility can help to explain differences that exist between various territorial disputes and the subsequent likelihood that the competition over the territory will lead to the outbreak of militarized conflict (Huth 1996, Hensel and Mitchell 2005, Hensel et al. 2008). While these scholars have produced valuable insights, they have not fully explored the role of issue indivisibility on territorial dispute duration. More specifically, they have not examined the role of variation in whether the target or the challenger possesses or desires to possess the indivisible intangible issue. I argue and

find evidence that whether the target or the challenger desire to possess the issues will have a dramatic effect on the duration and intensity of territorial disputes. More specifically, I offer an explanation for dispute duration and the subsequent strategies states use to resolve these disputes.

In chapter 5, I conclude by summarizing my findings and suggesting avenues for future research. I argue that my theory can be usefully used to further explain the outcomes as well as the duration and strategy of bargaining processes. Specifically, this research opens up avenues to explore how issue manipulation effects both wartime and peacetime bargaining processes. To test and further explore these theories, I suggest that researchers should engage in gathering fine-grained data. I also propose some policy extensions that arise from my theory and empirical research.

CHAPTER 2

WHAT ARE WE FIGHTING FOR: ISSUES, DIVISIBILITY, AND WAR DURATION²

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Abstract

I argue that to understand war duration and termination better, scholars should consider the multidimensionality (salience and divisibility) of all issues under dispute. I propose a theory of the role that the issues under dispute play in the warfighting process. I argue that the effect that the total divisibility of the issues will have on war duration depends upon the total divisibility of not only the belligerent's issues, but that of their opponent and whether they are acting as the target or the initiator. To test this theory, I develop a new continuous measure that can account for the salience and divisibility of all of the issues under dispute. To operationalize my measure, I update and expand on Holsti's (1991) issues data. I test my argument using data from all interstate wars from 1817-2007 and I find strong statistical support for my argument across all of my tests.

Introduction

Briefly consider the comparison between the duration of the First Sino-Vietnamese War (1979) and the Vietnamese-Cambodian War (1979-1988). In both cases, the wars were over a disputed border. The First Sino-Vietnamese War lasted 19 days while the Vietnamese-Cambodian War lasted 4293 days. In both cases, the initiator had a sizeable relative power advantage. Vietnam possessed 94 percent of Vietnam and Cambodia's combined capabilities at the outbreak of the war while China possessed 93 percent of Vietnam and China's. The large imbalance in capabilities between the belligerents in both of these wars suggests that they would have known the likely outcome of the war shortly after the fighting began. The resolution of the information problem can explain the duration of the First Sino-Vietnamese War, but not the similar case of Vietnam and Cambodia since they continued to fight long after the probable outcome of the war was known.

There is also little reason to suspect that the commitment problem was at work. There was not an impending or potential rapid shift in relative power that would nullify possible war ending agreements. The relative power between the two remained relatively stable before and after the fighting. Three years preceding the outbreak of fighting Vietnam possessed 90 percent of the shared capabilities. This relationship continued unchanged the year before the fighting when Vietnam still possessed 90 percent of the capabilities. The year after the fighting ended (1989), Vietnam had 90 percent of the states' relative capabilities, and after five years (1994) they possessed 90 percent. In this case, while there was a slight shift in relative power, it was neither large nor rapid. Vietnam still maintained a commanding lead, and since they were in nearly the same position of relative power as when they began fighting the commitment problem was not resolved as Cambodia still had roughly the same relative ability to fight as when they started. In fact, Vietnam and China experienced a similar change in relative capabilities over a five-year period (91% and 91%).

Scholars have built bargaining models of interstate war duration with the assumption that the divisibility and value of the issue under dispute are constant across cases, usually using highly salient divisible territory (Fearon 1995, Powell 2006). Because scholars hold the issues that the belligerents are fighting over constant, the issue under dispute cannot explain variation in the outcome. Most scholars attempting to explain the wide variation in the duration of wars suggest that the differences in war duration are due to either the information problem (the inability of the two sides to convey the actual state of their relative capabilities and resolve) (Quackenbush 2016) or the commitment problem (the failure of countries to commit to an agreement due to the fear of a future shift in relative power) (Reiter 2009). Specifically, a war will last as long as it takes to

resolve either the information problem, the commitment problem, or both. As demonstrated above, there is reason to suspect that these approaches cannot explain long wars.

If at face value the commitment problem does not provide an explanation for the differences between these two cases, or the differences in the duration of wars more broadly, what can? I argue that a closer look at the multi-dimensionality of the issues can account for the variation in the length of wars. Surprisingly, the role that issues play in the warfighting process has gone underexplored. There have been studies that have included the issues under dispute as a control variable, but the results of these analyses are mixed. However, these studies only consider one issue per war and only one dimension of that issue, salience (Bennett and Stam 1996, Slantchev 2004). States usually fight over multiple issues simultaneously, each of which varies in both divisibility and salience. As such, for scholars to explore the role of divisibility in the warfighting process, they must consider the effect of all of the issues that belligerent states are disputing not just a single issue. I fill this gap in the literature by developing a theory and measure that can account for the multidimensionality of all the issues under dispute.

In this paper, I argue that states desire to end their wars as soon as there has been a convergence regarding the probable outcome of the war. However, the presence of an indivisible issue(s) impedes their ability to do so.³ Since the belligerent states cannot divide the issues, they can either offer a concession to their opponent that compensates it for its loss once the likely outcome is known or fight to the limits of one side's resolve. States desire to do the first since it is the less costly of the two options. Their ability to find an acceptable concession is dependent upon the number and salience of the indivisible issues under dispute (A measure I will call total divisibility throughout the remainder of this paper). By considering the multidimensionality of the

³ I define an indivisible issue as an issue that cannot be divided without losing its value. An indivisible issue can either be physically indivisible or be indivisible because it possesses socially constructed values (Toft 2005).

issues, it is possible to estimate the costliness of concessions required to open up bargaining space where it had previously not existed. When the value of the indivisible issues increases relative to the value of the divisible issues, it will be more difficult for the disputants to offer concessions that will allow them to create a bargaining range. Either the necessary concession is costlier than fighting the war to an end, or it does not exist. The inability to create a bargaining range will force the states to fight to the limits of one side's resolve⁴, a process that will lead to more protracted wars.

I contend that the total divisibility of the issues under dispute will have different effects on targets and initiators. Specifically, when initiators fight wars to capture issues with low total divisibility but the targeted state is not, wars will be relatively short. The target will seek to end wars through the introduction of concessions because the initiator will have no room to negotiate since they are highly resolved. As the total divisibility of the issues for both the target and the initiator decrease, both states' resolve will increase, and the costs of creating a bargaining range will be high, leading to longer wars. I argue that as the value of the indivisible issues increases relative to the value of the divisible issues, the longer the wars that targets will fight regardless of the total divisibility of the initiator.

To assess my argument, I use an indicator of issue multi-dimensionality that is conceptualized and measured continuously. To operationalize this variable, I update and expand the data on the issues states fought wars over (Holsti 1990). I then determine whether they are divisible or indivisible, and derive a new indicator for the salience of each of these issues. I then run my theory through a series of statistical tests, using data on all wars from 1817-2003. Ultimately, I find strong statistical evidence to support my argument.

⁴ I define resolve as the costs one side is willing to pay to achieve their desired objective.

What do we know about war duration?

Previous attempts to explain the duration of wars and how they end mainly rely on the information and commitment problems. Explanations that draw upon the information problem assume that the appropriate distribution of the issues under dispute is determined by the power of the disputants, which will likely determine the outcome of the war (Wagner 2000). States resort to war when they cannot come to an agreement regarding their ex-ante relative power, which will determine the appropriate distribution of the issues. The information problem arises because both sides have an incentive to bluff regarding their capabilities, making the pre-war information exchanged between the two parties less credible. However, the process of fighting leads to a convergence in the belligerents' estimates of their probability of winning the war. When the two sides come to a convergence regarding their relative power, the war will end (Goemans 2000, Slantchev 2003). The information that pushes the belligerents towards convergence comes from the battlefield, in the form of either accumulated battle deaths or the trend in battle outcomes (Filson and Werner 2002, Smith and Stam 2004, Werner and Yuen 2005, Quackenbush 2016).

While the assertion that war serves as an information revealing mechanism provides a compelling explanation for war duration and termination, it does not explain long wars (Ramsay 2008). If war begins because of an information problem and ends when the information problem is resolved, then wars should be relatively short and end with a negotiated settlement (Powell 2006). However, this is far from being the case. To solve the puzzle of protracted wars and the variation in the ways wars end scholars have turned their attention to the commitment problem.

The commitment problem exists when one side fears that a future shift in power will make any agreement unlikely to hold. Since peace agreements are not self-enforcing, the commitment problem is always present, both during and after wars (Reiter 2009). Scholars working in this vein

argue that the stronger the commitment problem at the outset of the war (the larger the anticipated potential shift in power), the longer and more intense the war will be. This inability arises because the disputants must reach a balance of power that can be self-enforced after the fighting has ended. Such a status quo exists after one side has destroyed the ability of their opponent to fight a war (Randle 1973, Werner 1999, Weisiger 2013, Wolford et al. 2011, Powell 2012).

Critics of commitment problem explanations have suggested that while it is easy to find examples of war revealing what was private information, it is more difficult to find historical cases where a war resolved the commitment problem. States have historically been content with settlements that do not halt the rise of their opponent but only slow it. According to explanations based on the commitment problem, this should not be the case. States should not be content with war ending agreements that do not destroy the exogenous or endogenous source of the future shift in power (Goemans 2010).

Since neither information nor commitment problems can explain long wars, the third rationalist explanation for war, issue indivisibility, is the most likely explanation. The inattention paid to the role of issue multi-dimensionality in the war duration and termination literature is primarily due to Fearon's (1995) dismissal of issue indivisibility as a cause of war. Because the issues that states engage in disputes over are multidimensional and complex, Fearon contends that some form of side payments designed to avoid war or concessions will be available, wherewith one side can compensate the other for the value of the lost issue. Fearon is correct to assert that the issues that states dispute over are multidimensional and complex. However, without considering the value of the indivisible issues under dispute (something held constant in most bargaining models of international conflict), the availability and costs of concessions are not incorporated. The inattention paid to indivisible issues is problematic and suggests that the impediments to

settlement posed by issue indivisibility can still be present but theoretically and empirically unaccounted for. This would be the case when offering a concession would be costlier than fighting a war. I argue that unaccounted for issue indivisibility is a significant contributor to the duration of wars and is driving several previous findings regarding exceptionally long wars. What follows is a first step in remedying this shortcoming.

An Issue-Based Explanation of War Duration and Termination

I assume that warring states are rational and that war is similar to a costly lottery, meaning that there is some non-zero probability that either side will win the war if the states were to fight it to a finish. At the outset of the war, the probability of either side winning the war is unknown. However, the fighting process reveals the true nature of the states' relative power and resolve and subsequently their chance of winning the war. The probability of either side winning the war suggests the likely outcome and the appropriate and most cost-effective distribution of the issues (Wagner 2000).

Once the belligerent states obtain some estimate of the probable outcome of the war, they will desire to end the war to avoid paying the high costs of fighting to the limits of one side's resolve. However, when one or both sides have indivisible issues under dispute, it will be difficult for the belligerents to come to a negotiated agreement. This difficulty stems from the fact that any concession on the indivisible issues will require one side to sacrifice all of the values attached to the issue(s). The value of the issues under dispute will roughly correspond with the degree of salience with which the belligerents hold the issue.

States fighting over indivisible issues still desire to pay as few costs as possible while obtaining as much of the value as they can. This will require that the belligerent states reach an agreement that ends the war short of the point of one side reaching the limits of its resolve. To end

the war with a negotiated settlement states must create a bargaining range. A belligerent can do this by introducing a new divisible compensatory issue, as Fearon (1995) suggests. The new issue(s) must be less than the belligerent that is offering them would be willing to pay if they were required to fight the issue to an end, but still possess enough value to compensate its opponent for the rest of the costs the state is willing to pay for the indivisible issue. The ability of states to introduce a compensatory issue is dependent upon the value of the total value of the indivisible and divisible issues relative to the value of the available compensatory issues.

As the total divisibility decreases, it becomes more difficult for the belligerents to find an issue that can offset its opponent's costs. This difficulty is because either the required compensatory issue does not exist or the value of the needed compensatory issue exceeds the costs of fighting the war to the limits of one side's resolve.

The ending of the Mexican-American War is an excellent example of the creation of bargaining space during a war. In this case, the United States was seeking territorial expansion at the expense of Mexico, amounting to nearly 55 percent of Mexico's land. Mexico was not only attempting to maintain the sparsely populated and mostly barren land but also believed that its national honor and reputation for resolve were at issue. The United States had used overwhelming force to capture most of Mexico's major population centers, including Mexico City, the nation's capital. Mexican decision makers knew that an outright victory was unlikely, but there was still some small probability that they could achieve it through the employment of guerrilla warfare tactics. Mexico was willing to pay the costs of continued fighting to maintain possession of the issues under dispute into the foreseeable future if the US did not compensate them for what they were sacrificing. However, the United States also desired to end the fighting through negotiation, as they knew that continued fighting would pose more costs than they were willing to spend. To

stop the fighting before having to push Mexico to the limits of its resolve, U.S. decision-makers offered Mexico \$15 million for the territory and a promise that the United States would assume all debts Mexico owed to U.S. citizens (Henderson 2007). This financial compensation allowed the United States to create a bargaining range and both sides were better off. Mexico was compensated for the losing the value they attached to their national honor and reputation while the United States saved the costs they would have expended if they were forced to push Mexico to the limits of their resolve.

In cases where the belligerents do not create a bargaining range through the introduction of a new issue, the belligerents will fight the war until one side reaches the limits of its resolve. States will be willing to attempt to push its belligerent to the limits of its resolve even when the probability of winning the war is low, but the expected costs of the war do not exceed the value that the states are willing to pay for the issue(s). As long as there is some non-zero probability that the belligerent can win the war, continuing the war brings with it the possibility that the belligerent will obtain all of the indivisible values under dispute. In this case, the belligerent will have a higher expected utility by fighting until they reach the limits of its resolve, than they would if they conceded the issue and obtained none of the values attached to the indivisible issues.

The fact that states will be increasingly willing to continue fighting long, costly wars as the value of the indivisible issues increases, even when there is a low probability of winning, is somewhat counterintuitive. This increased willingness will especially be the case when the continuation of the war puts the existence of the state as an autonomous unit at stake. The roots of this phenomenon lie in the desire of the leader of the country to maintain its political survival. The more valuable the indivisible issues under dispute, the more significant the impact it will have on the ability of the leader to provide benefits to the members of the selectorate's winning coalition

and maintain her grip on power (Downes and Rocke 1994, Goemans 2000, Bueno de Mesquita et al. 2005). The impact of losing the values attached to the issues under dispute will have on the ability of the leader of a belligerent state will be especially problematic when there are valuable indivisible issues under dispute. If the belligerent were to lose the war, they would lose all of the values attached to the issues under dispute, and they have had to extract some portion of the expense for the war from its winning coalition, or, at the very least, divert resources that would have been used to pay off the members of the winning coalition toward the warfighting effort.

The prolonged and destructive fighting of the Vietnam War is an example of the belligerent's inability of belligerent to find a compensatory issue to buy off the remainder of the opponents' resolve. In this case, the United States desired to ensure the survival of South Vietnam as a state while North Vietnam wanted to reunify their country. The United States was unable to find any issue valuable enough to introduce a bargaining range, despite repeated attempts. As a result, Vietnam was willing to push the United States to the limits of its resolve in spite of the enormous imbalance of capabilities between the United States and North Vietnam. In 1973, the United States pulled out of Vietnam. In the end, North Vietnam obtained all of its desired issues under dispute against a much stronger opponent, although they did so at enormous costs (Herring 2012).

The multidimensionality of the issues that states are fighting over not only vary across wars but also between belligerents fighting the same war. This variation stems from the belligerent's role as an initiator or a target. The initiator largely chooses the issues that it is willing to fight over as well as the target of its attack. To demonstrate this variation, consider the case of the First Russo-Turkish War (1828). In this case, the Ottoman Empire (the target) was concerned with the protection of commercial interests and maintaining the integrity of its empire, while Russia (the

initiator) was helping a dissident group within the Ottoman Empire achieve autonomy and protecting religious and ethnic confreres (Holsti 1991). The issues the Ottoman Empire was fighting for were issues related to its desire to maintain the status quo. Alternately, the issues which Russia was fighting over were related to its attempt to overturn the status quo and obtain new values. To better illustrate how issues can vary between initiators and targets, consider the case of the United States and Mexico again during the Mexican American War (1846-1848). In this case, the United States was seeking to expand its territory. The territory itself had little other value for the US than the tangible value of the land itself possessed, suggesting that the only issue under dispute for the United States was territory. Mexico was fighting over multiple issues. Not only did they desire to maintain possession of the territory, but they also contended that its national honor and the survival of its regime was at stake. In both cases, the target and the initiator desire the values under dispute, but the manner by which they achieve this will vary based upon whether they are seeking to revise or maintain the status quo.

The divisibility of the issues will largely determine the strategies the target employs to maintain the ex-ante status quo. When the issues the target is fighting over are divisible, as they were in the case of the Ottoman Empire, the target will fight until they ascertain the probable outcome of the war. At this point, the target will seek to divide the issues according to the likely outcome. The target will still desire the ex-ante status quo, but the costs of reobtaining these values are higher than the costs they are willing to pay to achieve this outcome. After the target knows the probable outcome, it can make concessions to obtain as much of the issue as they likely would if they fought the war to a finish and avoided paying the costs of continued fighting. Subsequently, when the target is disputing over divisible issues, they should come to some form of war-ending agreement relatively quickly.

When the target is fighting over issues with low total divisibility, there is no possible division of the issues. In this case, the target still desires to maintain the ex-ante status quo; in fact, this is its only option. Any concession would require it to sacrifice the indivisible issue(s). However, at any point the target chooses to end the fighting, it is conceding value to its opponent and has allowed the initiator to alter the status quo and take all of the issues under dispute. The only way for the target to maintain possession of any of the indivisible values is to push the initiator to the limits of its resolve. This will require that the target pay higher costs than it would if it could find some war ending agreement and is, therefore, an undesirable alternative. The high costs associated with a state conceding the indivisible issues will make the target more likely to engage in attrition behavior to demonstrate to the initiator the high costs they will incur if the target decides to fight the war to a finish. However, there is a selection effect. The initiator will anticipate the divisibility of the target and will only choose to engage in the fight if it believes that it has the capabilities or resolve to defeat the target. In most cases, when the target has nearly pushed the initiator to the limits of its resolve, the initiator will likely offer a concession that will allow the sides to come to a negotiated agreement and avoid having to achieve a victory of conquest. This leads me to the argument that targets fighting over issues with low total divisibility will usually engage in attrition behavior leading to long wars regardless of the total divisibility of the initiator.

Scholars have shown that attrition behavior leads to long wars that end in a decisive victory (Langlois and Langlois 2009). I anticipate that at the root of this finding is the multidimensionality of the issues. States will engage in attrition behavior when they expect that they can ratchet up the costs of the warfighting process while precluding the possibility of negotiation in the anticipation that it will be able to force the other side to concede to all of its demands. While the strategy of attrition is appealing for a belligerent since it has the possibility of bringing its opponent to a point

where it is willing to give into all of its demands, engaging in attrition behavior is very costly. These costs are a function of the nature of the fighting, in that it requires many troops to engage in repeated attacks that attempt to push an opponent to the limits of its resolve. This makes the employment of attrition behavior unappealing if a negotiated agreement is possible.⁵ My argument leads to the following hypothesis:

Hypothesis 1: *As the total divisibility of the target's issues decreases, the wars they fight will be longer.*

Since initiators are seeking to revise the status quo, the manner in which they fight their wars will depend upon the divisibility of the issues that the target is fighting over. When the divisibility of the issues the initiator is fighting over is low, but the issues that the target is fighting over are divisible, the initiator will be highly resolved and unwilling to make a compromise. In this case, the initiator will attempt to use overwhelming force to quickly establish the probable outcome and force the target to make concessions. The target will be willing to offer concessions because it knows that the initiator is unable to compromise.

When the divisibility of the issues that the target is disputing over is low, the initiator can anticipate that it will have to push the target to the limits of its resolve. Because the target is disputing over issues with low divisibility, the target will be willing to engage in attrition behavior and pay high costs. In this case, if the initiator is also disputing over issues with low divisibility, the initiator must be willing to engage in attrition behavior if they desire to push the target to the limits of its resolve and capture the values attached to the issues. Additionally, the lower the initiator's divisibility, the less able target will be to offer compensatory issues for potentially sacrificing an indivisible issue. Thus, when the initiator is facing a target with low divisibility,

⁵ I demonstrate the willingness of targets to engage in attrition behavior in appendix A.

decreasing target divisibility will be associated with more protracted wars since it becomes less likely that its opponent will be able to offer a concession. From the theory above, I derive the following hypotheses:

Hypothesis 2: *When the initiator is facing a target disputing divisible issues, the lower the total divisibility of the initiator, the shorter the war will be.*

Hypothesis 2a: *When the initiator is facing a target disputing issues with low divisibility, the lower the total, divisibility of the initiator, the longer the war will be.*

Research Design

Since I am studying war duration, I use a dataset consisting of the major participants of each war from 1820-2007, as identified by the Correlates of War Project (Sarkees and Wayman 2010).⁶ In line with previous research, I disaggregate some multilateral wars, matching each combatant with its principal belligerent(s) (Weisiger 2013). This leaves 113 total cases. The initiator of the war is state A, and the target is state B, as coded by the War Initiation and Termination Data Set (Fortna et al. forthcoming). I make a departure from previous work by excluding World War I as well as the European theater of World War II from my analysis. I omit these cases due to its complexity, in that the issues under dispute and the complexity represented by the various values being disputed between the belligerents are complex and multifaceted. While some multi-party wars that are included in my analysis, it is easier in these cases to identify the principal belligerents and the main issues that they are disputing. Regardless, due to the nature of the issues under dispute and the longevity of these wars, I anticipate that excluding World War I and the European theater of World

⁶ The data I employ covers the dates of 1817-2007 because COWs coverage only goes to 2007. I follow the conceptualization of a war developed by Sarkees and Wayman (2010). War is a conflict between two states that results in over 1,000 battlefield deaths.

War II biases my findings against my hypothesized assertions since these wars are exceptionally long and fought over a large number of issues, many of these being indivisible issues.

Since I am employing event history models, the outcome variable of interest is the number of days from the point the war starts until it ends. To operationalize this, I use data taken from the War Initiation and Termination dataset (WIT), which provides the start date and end date for the war (Fortna and Fazal forthcoming). I use this information to calculate the number of days that elapsed from the beginning of the war to the point that the war ended or the belligerent under observation dropped out of the war. Unlike alternative measures, the WIT duration measure better matches the date when states began and ended the fighting and are less sensitive to diplomatic events.⁷ This variable ranges from 1 to 4293 days with a mean of 403.73 days and a standard deviation of 773.129 days.

To measure and operationalize total divisibility, I first identify each of the issues that states have fought wars over. To do this, I use data taken from Holsti (1991). Holsti's data identifies each issue that was under dispute for each belligerent at the start of a war. His data covers most wars found in the Correlates of War Interstate War dataset up to 1987; however, there are some gaps in his coverage. Notably, Holsti does not cover wars that took place outside of the European continent during the 19th century or some smaller wars throughout the 20th century. To ensure that I am looking at the entire universe of cases that the Correlates of War project classifies as an interstate war, I fill the gaps in coverage.⁸ I attempt to follow the coding procedure employed by Holsti as closely as possible. Specifically, I found each of the definitions for the issues he identifies and

⁷ As a robustness check, I also use the start and end dates as coded by the Correlates of War. I find that all of my results hold.

⁸ The Correlates of War identifies an interstate war as occurring when the states involved in military hostilities suffered more than 1,000 battlefield deaths. (Sarkees and Wayman 2010)

match these against the historical records for the missing cases.⁹ For the issue to be included, I must find two sources that verify it was an issue under dispute.

Whether a single issue can be divided is binary; it is either divisible or indivisible. An issue is indivisible if it cannot be divided without the divided object losing the value that it possessed—the classic example of this is King Solomon's determination that the best way to settle the competing mothers' claims was to split the contested baby in half. Alternatively, socially constructed values may be added to previously divisible issues to make them indivisible. As previous scholars have pointed out, issues are rarely physically indivisible but are more commonly the product of socially constructed values shared by a large proportion of a state's domestic population and as such would lose its value if divided (Fearon 1995, Toft 2006, Goddard 2010). A simple rule that can be used to decipher between divisible and indivisible issues, as they are commonly found in international relations, is by determining whether or not the issue can be divided without the issue losing the values attached to it by the combatants.

While it is true that the divisibility of any one issue is binary, states rarely dispute only one issue. Because of this, it is essential to account for the divisibility of all of the issues under dispute and its associated values into models of wartime dynamics. Scholars should therefore not consider the values states fight over to stem from only one issue, but multiple issues. This means that while some issues that a given state is fighting over will be indivisible, there are other issues that the state can introduce to offset and accommodate its opponent's indivisible losses.

I use the distinction between divisible and indivisible issues developed by Toft (2005), an issue is divisible if it can be divided without losing its value for those that desire to possess the issue. An issue is indivisible if a division of the issue would destroy the value attached to the

⁹ See Appendix B for the definitions of each issue as conceptualized by Holsti (1991) as well as a table with the frequencies of each issue within the data.

issue.¹⁰ Divisible issues are assigned of score of 1 while indivisible issues are assigned a score of -1, meaning that indivisible issues will take on negative values while divisible issues will take on positive values.

The second dimension of issues I consider is issue salience. Issue salience is determined by assessing the number of people who possess (or will possess) the values attached to the issue (Diehl 1992). The best means of determining the number of people that an issue will benefit is by determining whether an issue is a rival or a non-rival good. A non-rival good is one where one person's consumption of the good does not affect the ability of others to consume the good. On the other hand, rival goods are those where another person's consumption of the good will limit the ability of others to consume the good (Olson 2009). Since more people can partake of non-rival goods without diminishing its value, more people will value them. To clear, in this context the concern is whether or not an issue is rival or non-rival within the borders of a state and not whether the issue is rival or non-rival between states or among states.

The intensity with which these values are held (or the number of values that they possess) is determined by the effect that it will have on the day-to-day lives of those affected by losses or gains of the values attached to the issues. The effect can be the product of psychological gains or losses, material gains or losses, or both. This suggests that the loss of socially constructed indivisible issues such as religion, ideology, or national honor might not physically affect the day to day lives of a nation's population, but may have a dramatic impact on the day-to-day psyche of those affected by the loss, ultimately having the same effect. Considering both of the dimensions

¹⁰ For a table showing the coding decisions for placing issues into divisible and indivisible categories and for the decisions going into placing each of the issues into their categories see Appendix C .

identified above, I have placed the issues that states have fought over onto a scale from 1 to 5, with scores of 1 assigned to issues with the lowest salience and scores of 5 the highest.¹¹

Finally, I multiply each of the issues by its salience, which means that highly salient divisible issues will have a higher positive impact on the overall divisibility. After multiplying each issue by its salience, I sum the values for the issues under dispute for each belligerent, giving me the total divisibility of the issues for each belligerent in each war. Higher scores on this measure signify that there are more divisible values under dispute while lower scores signify that there are more indivisible values under dispute. I also collapse the total divisibility of the target into two categories assigning a 1 to a case where the issues the target is disputing over have low total divisibility (total divisibility ≤ -5) and a zero to all other cases.

To help illustrate this process, I will return to the example of the United States in the Mexican-American War. As mentioned above, the United States was fighting to obtain territory as well as compensation for damages incurred from previous disputes. The salience score assigned to territory is 3, and the score assigned to compensation is a 2. Since each of these issues is divisible, I will multiply the salience by 1. I then sum these scores giving me a score of 5.

I use a standard set of control variables for research exploring war duration (Slantchev 2004, Weisiger 2013). Researchers have shown that each of these variables has a statistically significant effect on war duration. Across each of my models, I control for the relative power of the combatants. I derive this measure by dividing the capabilities of the initiator by the combined capabilities of the dyads. This score gives the initiator's share of the relative capabilities using the scores assigned by the Composite Index of National Capabilities (CINC) at the war's onset (Slanchev 2004, Ramsay 2008). In addition to relative power, I control for shifting power by using

¹¹ A table with each of the issues placed in a category per their salience can be found in Appendix E.

a five-year lag of the change in the state's share of power. I take data for this variable from Weisiger (2013).

I also employ control variables for contiguity, measured dichotomously, with countries that receive a one sharing a land border and values of zero suggesting they do not share a border. I also use a dichotomous indicator to control for the regime type of the initiating state. To operationalize this, I use data from Polity IV project. I code democracies (states receiving a Polity score ≥ 6) as 1 and all other regime types as a 0. I use a similarly coded dichotomous indicator to control for the regime type of the target as well. The terrain states fight a war on will also affect the manner and intensity with which the states fight. I control for terrain by using a variable that is operationalized so that higher values indicate terrain that is more difficult. I take data for this variable from Stam (1999). I also control for the component parts of the CINC index. This includes the total population of the states and total military personnel. I also control for the number of countries that participated in the war. I take the data for this variable from the COW's interstate war data. Finally, I control for the daily intensity of the fighting. I operationalize this variable by taking the total battlefield deaths for each war and dividing it by the number of days that the war lasted. In table 1, I provide the summary statistics for each of my primary independent and control variables.

Table 1: Summary Statistics for independent Variables

	Obs	Mean	Standard Deviation	Min	Max
Total Divisibility (Initiator)	113	-0.902	4.210	-13	5
Total Divisibility (Target)	112	-1.910	3.983	-13	9
Low Divisibility (Initiator)	113	0.265	0.443	0	1
Low Divisibility (Target)	113	0.327	0.471	0	1
Relative Capabilities	113	0.584	0.307	0.041	0.991
Power Shift	97	0.184	0.164	0.001	0.681
Number of States	113	2.415	0.809	2	6
Terrain	113	0.600	0.240	0.200	1.050
Contiguity	113	0.610	0.489	0.00	1.00
Total Population	112	0.185	0.270	0.001	1.166
Total Troops	113	1104.69	1313.542	4	5460
Democratic Initiator	113	0.433	0.497	0.00	1.00
Intensity	113	209.887	370.364	.5405	3000

Analysis

To assess my hypotheses, I use a Cox proportional hazard models using the Breslow method for ties. The advantage of the Cox model is that, unlike parametric survival models, it does not assume a baseline distribution. Since I do not have a strong theoretical reason to specify a baseline hazard, this attribute is advantageous. Additionally, since I anticipate that the duration of the war depends upon not only a state's total divisibility but also that of its opponent, in model 2, I utilize an interaction between the divisibility of the target and a dummy variable for the divisibility of the initiator. I do the same in model 3, except that I employ an interaction between the divisibility of the target and use a dummy indicator that indicates instances where the initiator is fighting over issues with low total divisibility. I choose to use a dichotomous indicator for my interactions, instead of the full variable, for ease of interpreting the interactive effect.¹²

I present the effects of each of my covariates hazard ratios. The interpretation of hazard ratios is somewhat counterintuitive because, unlike coefficients generated by duration models,

¹² Tests of the proportional hazards assumption can be found in Appendix G. I find that my models do not violate this assumption.

there are no negative values to signify shorter lengths of time to failure. Hazard ratios below one signify that a one unit increase in the variable of interest leads to a reduction in the risk of failure. On the other hand, values higher than one signify that a one-unit increase in the variable of interest will lead to a corresponding increase in the risk of failure. Additionally, in each of my models, I employ robust standard errors.

Table 2: Cox Proportional Hazards Model on War Duration, Robust Standard Errors

	(1) (Hazard Ratios)	(2) (Hazard Ratios)	(3) (Hazard Ratios)
Primary Independent Variables			
Total Divisibility (Initiator)	0.942* (0.030)	0.924** (0.003)	
Low Divisibility (Target)		0.800 (0.216)	
Total Divisibility (I) x Low Divisibility (T)		1.220*** (0.076)	
Total Divisibility (Target)	1.089** (0.042)		1.026 (0.039)
Low Divisibility (Initiator)			1.954** (0.621)
Total Divisibility (T) x Low Divisibility (I)			1.144*** (0.061)
Controls			
Relative Capabilities	1.337 (0.529)	1.482 (0.632)	1.677 (0.668)
Power Shift	0.451 (0.361)	0.469 (0.350)	0.555 (0.412)
Number of States	0.888 (0.123)	0.971 (0.109)	0.959 (0.116)
Terrain	0.198*** (0.112)	0.131*** (0.077)	0.171*** (0.096)
Contiguous	1.182 (0.283)	0.089 (0.283)	1.324 (0.358)
Total Population	2.584 (1.786)	2.393*** (1.606)	2.450 (1.806)
Total Troops	0.999* (0.000)	0.999* (0.000)	0.999* (0.000)
Democratic Initiator	1.531 (0.532)	1.376 (0.473)	1.395 (0.470)
Intensity	1.001*** (0.000)	1.001*** (0.000)	1.001*** (0.000)
Observations	96	97	96
Time at Risk (Days)	41952	41952	41952
Log-likelihood	-327.628	-326.644	-326.644

* p<0.10 ** p<0.05 *** p<0.01

In Table 2, (above) I present the results of my duration analysis using my variable of interest. Since I include the total divisibility of both the target and the initiator, I estimate the

hazard ratios holding all other covariates at its means. In the case of the target and the initiator, the mean values are divisible, suggesting that these estimates represent instances when belligerents are facing a state fighting over divisible issues.

In model 1, I find the estimates of the hazard ratios for the total divisibility of the initiator and the target to be statistically significant and in the anticipated direction. Specifically, I find that for each one-unit increase in the total divisibility of the initiator there is a 5.8% reduction in the hazard. This suggests that as the divisibility of the initiator increases that length of the war will also increase. Since in this model the initiator is essentially facing a target fighting over divisible issues, this suggests that as the total divisibility increases the resources the state is willing to expend and the intensity with which they will fight also decreases, leading to longer wars. On the other hand, for every one-unit increase in the total divisibility of the target, there is an 8.9% increase in the hazard. As the total divisibility of the target increases wars will be increasingly shorter. Both of these findings add considerable support for my hypotheses. I will graphically analyze these findings in more depth below. In model 2, I introduce an interaction between the total divisibility of the initiator and a dichotomous indicator of low levels of divisibility for the target ($\text{divisibility} \leq -5$). I find the interactive effect between these variables to be statistically significant with a hazard ratio over one. I find the same for the interactive effect I introduce in model 3. Since interactive effects are difficult to interpret without more in-depth analysis, I provide graphs of the survival curve below.

Interestingly, across all three models, I do not find the relative power to have a statistically significant effect on the duration of wars. Additionally, contrary to previous findings (Weisgier 2013), I do not find a power shift to have a statistically significant on the duration of wars. As found by previous researchers, I also find a statistically significant effect for terrain. Specifically,

that as the terrain becomes more difficult wars will last longer. Across all three models, I find that the total number of troops will have a statistically significant effect on the duration of the war. As the number of troops increases, wars will be longer. I also find that the intensity with which states fight will make wars shorter, or that it increases the hazard. I measure both the number of troops and the intensity of the fighting in a manner that allows for wide variation. This means that these will have a relatively large effect although the hazard ratio suggests that a 1-unit increase leads to a corresponding reduction or increase in the hazard.

To further analyze the results from model one, I provide graphs of the survival functions for the initiator and the target at values of interest (-13, -5, 0, 5) (see figure 1). The results for the initiator, found in the panel on the left are very interesting. As I anticipated, when the cumulative divisibility is at its lowest there is a very steep decline in the duration of wars. After the first few hundred days, the probability that a war with a state with the cumulative divisibility of -13 are ongoing is approaching zero. Remember that in this model the opponent's divisibility is held at its mean, so they are essentially fighting a belligerent that is disputing over divisible issues. The probability of wars lasting for the other values of the initiator's cumulative divisibility also increase as expected. At the next level of graphed divisibility, -5, I find that they will last longer than when the initiators are fighting over divisible issues, values 0 and 5.

The survival functions for the target are found in the right panel of Figure 1. This graph shows that, as anticipated, as the total divisibility of the target decreases the probability that war lasts over time increases. In fact, after three thousand days, there is nearly a .4 probability that the war will be ongoing, and after two thousand days, there is around a .2 probability that the war will still be going. As the total divisibility of the issues that the target is disputing over increase there is a corresponding decrease in the probability that a war will last. However, after one thousand

days there is still a .2 probability that a target fighting over issues with divisibility of -5 will still be fighting. For the divisible values (0 and 5), the probability of a war lasting approaches zero relatively quickly. These findings provide considerable support for my hypotheses. However, they only tell half of the story without knowing how the duration of wars changes depending on the total divisibility of the opponent.

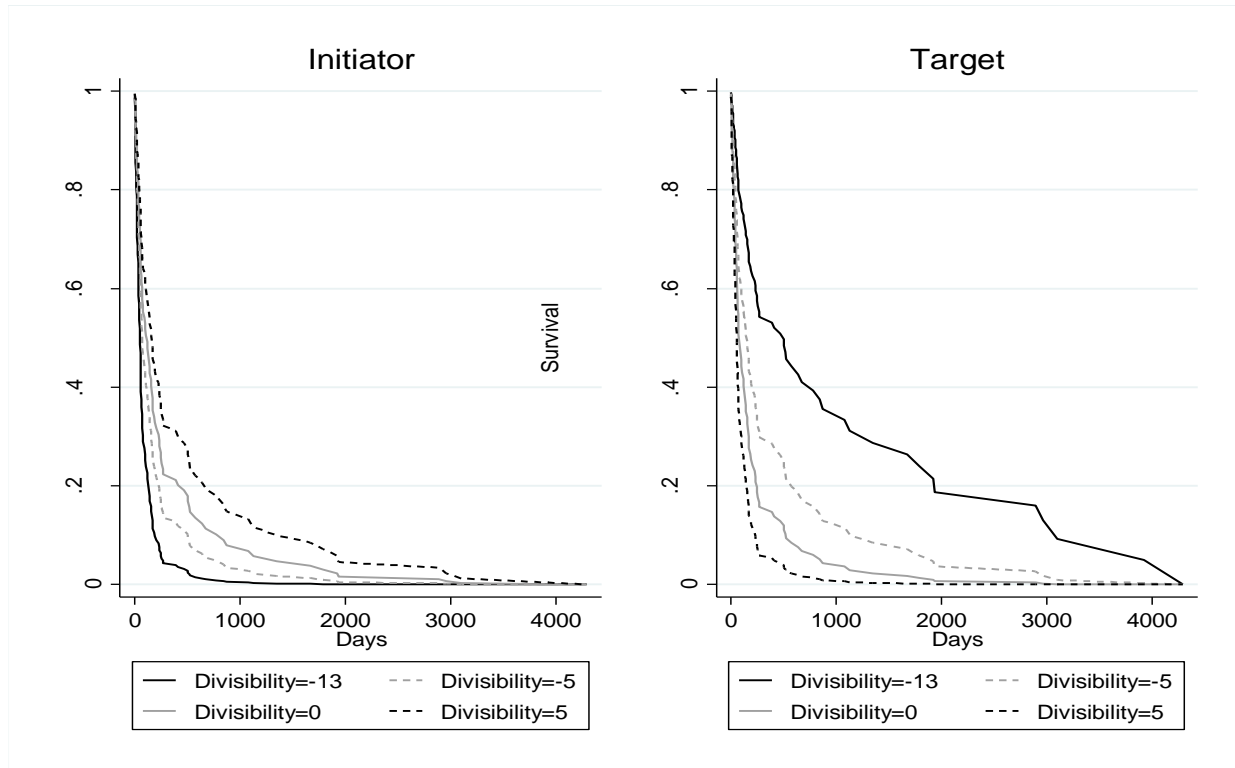


Figure 1: Predicted Survival Functions

In figure 2 (see below), I present the survival functions for my interactive effects. On the top row, I provide the survival functions for the total divisibility of the initiator interacted with a dummy variable for the divisibility of the target. On the bottom row, I graph the survival function for the total divisibility of the target interacted with a dichotomous indicator of the initiator's divisibility. In the upper left panel, I show the survival function for instances where an initiator is fighting a target that is disputing over issues with low divisibility. In this case, there is a striking

difference from the finding in figure 1. When the total divisibility of the target is at its lowest point, the probability of war lasting is much higher across the whole range of values. Specifically, when the total divisibility of the initiator is at its lowest value, -13, there is around a .6 probability that a war will be ongoing after 1,000 days. After 2,000 days, the probability only falls to .4 and only .2 after 4,000 days. When the target has a total divisibility of -5, there is a sharper drop off relative to -13, but wars have around .5 probability of lasting after 500 days and approximately a .2 probability of lasting past 1,000 days. For both of the divisible values (0 and 5) there is a steep drop-off and with the number approaching zero relatively quickly.

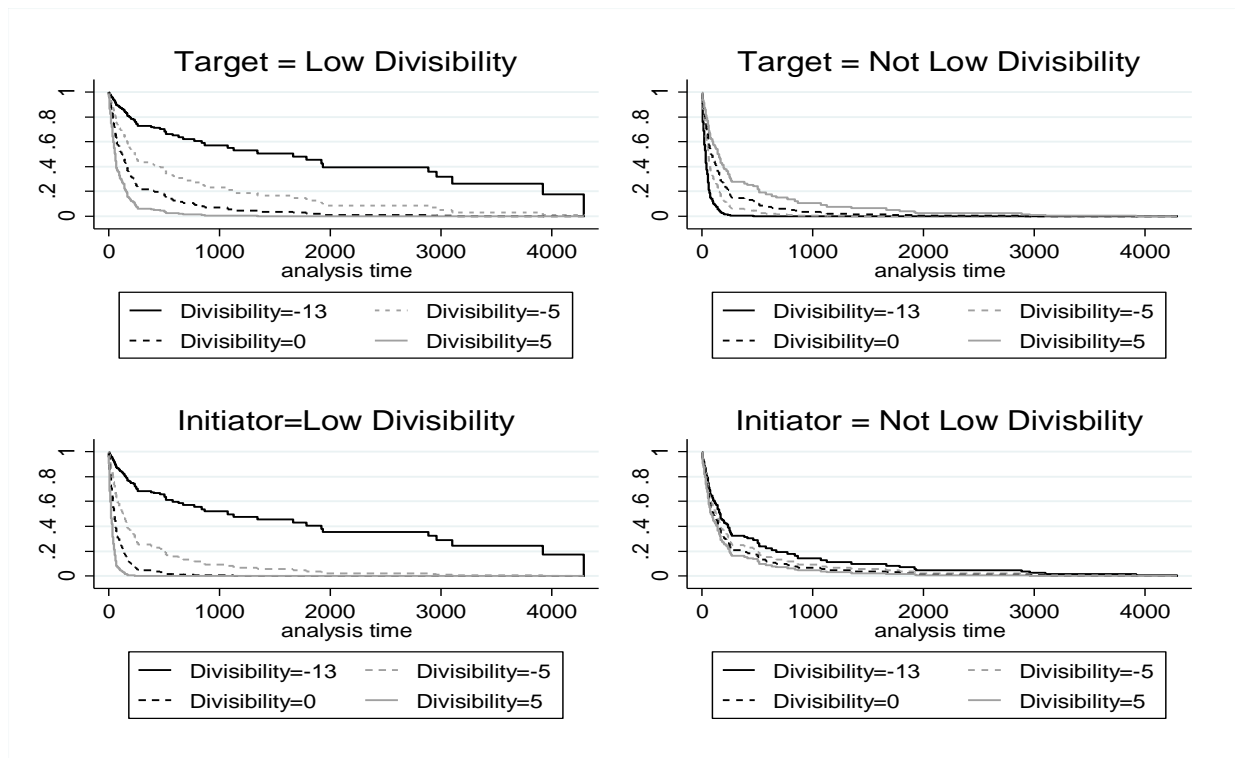


Figure 2: Predicted Survival Functions for Interactions

In the upper right-hand panel of Figure 2, I provide the survival functions for various levels of the initiator's total divisibility while interacting a dichotomous indicator for the target. The survival functions represent instances where an initiator is fighting a target disputing over divisible

issues. As can be seen, at the lowest level of total divisibility for the initiator, -13, there is a rapid decrease in the probability of the war lasting approaching zero at just over 200 days. This finding supports my assertion that when the initiator is disputing over issues with low divisibility and the target is not, the target will make concessions relatively quickly because they can anticipate that the initiator will be unable to back down and it is highly resolved. When the initiator is fighting over issues with the highest level of total divisibility its wars will be relatively longer than when this is not the case. In this case, at 500 days there is around a .2 probability that the war will continue, and the probability of the war lasting does not approach zero until 2000 days. These findings follow a similar pattern as those for the initiator in figure 1.

In the bottom left panel, I present the survival function for the interaction of the total divisibility of the target and a dichotomous indicator of an initiator fighting over issues with low divisibility. Unsurprisingly, I find that at the lowest value of total divisibility, -13, that wars have a .75 probability of continuing. At 1,000 days, the probability that the war continues is over .55 and falls relatively slowly with there being a .4 probability that the war lasts past 2,000 days. Most surprising is that there is nearly a .2 probability that wars last past 4,000 days. The other values follow the general pattern that I have uncovered with wars lasting longer the lower the divisibility, but the probability falls relatively steeply. States who are fighting over issues that possess total divisibility of -5, have .2 probability of fighting past 500 days with the probability of continued fighting approaching zero at around 1,000 days. The divisible values, as expected, approach zero relatively soon after the war begins. In the bottom right-hand panel, I present the survival function for instances where a target is fighting an initiator disputing over divisible issues. As expected, these survival functions largely follow the pattern established previously as the results mainly follow those found in figure 1.

Conclusion

In this paper, I have argued that taking into consideration the multidimensionality of the issues that states are fighting over can help us better understand the warfighting process. Ultimately, my theory and findings suggest that considerations beyond power dynamics matter to wartime dynamics and that a more in-depth treatment of the issues under dispute should be taken into consideration. The findings from my analyses offer strong support for my theory. My findings suggest that the issues under dispute play an important role in wartime dynamics. Specifically, that the total divisibility of the issues under dispute can provide explanations for long wars as well as the divergent wartime behavior of targets and initiators.

These findings offer a promising way forward, but also suggest the need for future work. In this paper, in a similar manner to previous authors, I have relied upon the assumption that the conditions that existed *ex-ante* will determine the outcome of the war. However, if the actors can manipulate the issues and concessions can be found during the warfighting process, as I suggested above, this assumption does not hold. More specifically, I anticipate that the dynamic nature of the issues under dispute, as well as some other relevant variables, will mean that wars can have asymmetric causality, meaning that during the warfighting process issues can be added to change the possible war ending agreements (Goertz and Mahoney 2012). Future research should explore how belligerents manipulate the total divisibility of the issues under dispute to strategic effect.

CHAPTER 3

CAUGHT IN THE FRAY: WARTIME SIGNALING AND INDIVISIBLE ISSUES¹³

¹³ Atkinson, Douglas. To be submitted to Security Studies. June 10, 2018.

Abstract

I argue that states will manipulate the disputed issues to send a clear signal of their resolve. The signaling state hopes that by revealing information regarding its resolve, it will end the war in a manner favorable to the signaling state. Specifically, I suggest that states will add highly salient indivisible issues. The addition of highly salient indivisible issues to the issues already under dispute changes the types of outcomes that the state can accept.¹⁴ Because indivisible issues are winner-take-all, their inclusion makes a war that could have ended in a negotiated settlement, into a war where a negotiated settlement is not possible. This allows a leader to tie her hands, thus allowing the state to distinguish itself from a non-resolved state.

Since signaling utilizing highly salient indivisible issues has the potential of being extraordinarily costly, states will be hesitant to use indivisible issues as a means of signaling. I suggest that before a state will be willing to send a signal of resolve through highly salient indivisible issues three necessary conditions must be met: 1) The state is highly resolved, but its opponents doubt its resolve. 2) The availability of highly salient indivisible issues to attach to the issues already under dispute. 3) The state is currently restrained from signaling its resolve on the battlefield but desires to signal that it will be able to use its latent military capabilities to bring the war to an end in the future successfully.

Introduction

The British experience during World War I represents a compelling case of wartime belligerent behavior. During the crisis leading up to the war, there was considerable doubt among the other great powers involved in the war whether Great Britain would enter the war at all. When Great

¹⁴ I define an indivisible issue as an issue that actors cannot divide without the issue losing its value. An indivisible issue can be either physically indivisible or indivisible because of socially constructed values (Toft 2005).

Britain finally did decide to enter the war, they did so to protest the violation of Belgium's neutrality by German armed forces, neutrality established by treaty (Otte 2014)¹⁵. At the outset of the war, Edward Grey, the Foreign Minister suggested that unlike the other parties involved in the war Great Britain had "nothing that we particularly sought or had entered the war to obtain for ourselves" (Grey 1925, 163). By the end of the war, however, Britain was fighting over far more than ensuring Belgium neutrality and the enforcement of treaties. The war had become about the safety of democracy, the rights of the weak in the international system, and the establishment of an international system that would guarantee peaceful relations according to liberal values in the future.

Ultimately, the war would drag on for four years and resulted in Britain paying far higher costs than any British policymakers could have imagined at the outset. Britain would ultimately suffer over 670,000 battlefield deaths, or 13 percent of those that served, making up nearly 2% of its population. Ultimately, 160,000 wives lost their husbands, and over 300,000 children lost their fathers (Winters 2003). In terms of monetary costs, the British government spent \$333,512,360,610.45 in 2017 US dollars on the army alone (W0 394/20). This is not to mention the high costs associated with caring for the vast numbers of disabled soldiers, widows and fatherless children for years to come. One historian of Britain during the First World War has remarked, "Had there been no war Britain could have built new universities in every major city, hundreds of advanced hospitals, thousands of schools, increased pension provisions and childcare, and still experienced a lowered tax burden than it did in 1919" (Gregory 2008, p. 2).

The example outlined above presents an interesting puzzle. Why did the issues that Britain fought over expand over time? This is especially perplexing since the addition of new highly

¹⁵ The Treaty of London, signed by Britain, France, and Prussia, established Belgian neutrality in 1839.

salient issues only made the stakes of the war higher, a defeat costlier, and the war more difficult to end. In fact, the stakes attached to the outcome of the war became unbelievably high, with the war on all sides being about more than just acquiring territory it became a competition over political ideology. The war increasingly became about democracy and other highly salient intangible values through the inclusion of new issues in late September 1914 and January 1918, two points in time when it looked most likely that Britain would lose. This makes the inclusion of new issues even more puzzling. Why would Britain raise the stakes of the war at the points when they were most likely to lose?

Previous scholars have suggested that the adjustment of the issues under dispute is the product of domestic political considerations. These scholars have suggested that leaders will adjust war aims when their side is losing. These leaders will do this more heavily invest their domestic population into warfighting effort in the hope that they can rally public support behind its cause (Downes and Rothe 1994, 1995, Goemans 2000). While leaders of states adjust the issues under dispute for domestic political reasons, the intention of countries adjusting war aims extends beyond efforts to secure public support and ensure domestic buy in but also serves as a means of communication between warring states.

I contend that the issues the British were fighting over expanded to send a credible signal of resolve.¹⁶ Britain did so by introducing new, highly salient indivisible issues in an attempt to tie its hands. Explicitly, it tied its hands by making defeat more costly and victory the only acceptable outcome. During a war, I argue states will manipulate the disputed issues to send a clear and costly signal of their resolve. States hope that by revealing credible information regarding their resolve, the war will end in a positive manner. To do so, states will add highly salient indivisible issues.

¹⁶ I define resolve as the costs a state is willing to pay to obtain its desired outcome.

The inclusion of these new highly salient indivisible issues to the issues already under dispute changes the types of outcomes that the state can accept.¹⁷ Because indivisible issues are winner-take-all, their inclusion makes a war that could have ended in a negotiated settlement, into a war where a negotiated settlement is not possible. This allows a leader to tie her hands, thus allowing the resolved state to distinguish itself from a non-resolved state.

If the war is lost, after the inclusion of the indivisible issues, all of the values attached to the issue will also be lost. The fear of losing the highly salient indivisible issue(s) will make warring states hesitant to use them as it makes losing the war much costlier. Therefore, states will be willing to send a signal of resolve using highly salient indivisible issues three necessary conditions must be met: 1) The state is highly resolved, but its opponents doubt its resolve. 2) Highly salient indivisible issues are available to be attached to the issues already under dispute. 3) The state is unable to signal its resolve on the battlefield but desires to send a signal that it is willing, and will be able, to employ its latent capabilities toward the warfighting effort at some future point.

My research offers a better understanding of long-held questions surrounding the expansion of the issues under dispute, a question that has long puzzled scholars of wartime behavior (1971). More importantly, in this paper, I offer a more in-depth understanding of belligerent states' wartime signaling behavior, a topic that has gone understudied in international relations research. Specifically, my research explains how states behave when they lack the military capabilities to signal their resolve on the battlefield. This paper represents the first step in a larger project. Due to limitations in available data, I perform a plausibility probe and not a test

¹⁷ I define an indivisible issue as an issue that actors cannot divide without the issue losing its value. An indivisible issue can be either physically indivisible or indivisible because of socially constructed values (Toft 2005).

of my theory. My findings are promising and suggest a more thorough quantitative examination of issue manipulation across all wars over time is warranted.

In this paper, I provide a brief review of the literature that has explored the research on pre-crisis signaling behavior. I will then outline a theory of the strategic manipulation of issues during wartime. Following this, I will turn in-depth case study of Britain during the First World War process tracing techniques. I identify two points in the war, late September 1914 and January 1918, where I contend that the British intended to signal their resolve through the addition of highly salient. Finally, I will conclude with suggestions for future research and provide some policy recommendations derived from my findings.

Signaling Resolve during War

Scholars have extensively studied the ability of states to send credible signals of their resolve in the context of international conflict. However, much of this work has focused on pre-war crisis diplomacy with few researchers exploring the how and when of wartime signaling. The inattention to wartime signaling behavior is problematic since periods when states are in the process fighting are moments when a state has the strongest incentives to send a costly signal of its resolve. In the remainder of this section, I will outline the literature that has explored signaling during crisis bargaining scenarios and demonstrate how these insights fit into wartime signaling.

Scholars have theorized that when two states are engaged in crisis bargaining, the likely winner of the dispute will be the side that has the highest probability of winning a potential war. The probability that a state will win the potential war is a function of the states' relative capabilities and resolve. If the sides knew this information about their opponent and the probable outcome of the war, they would divide the issues according to the probable outcome. By doing this, the states

can save the high costs of fighting a war while coming to a similar distribution of the issues as if they had fought the war to an end. States will likely have an accurate estimate of their opponent's capabilities relative to their own, but they have less knowledge about their opponent's willingness to use these capabilities since an opponent can only know a state's willingness to bear the costs of war after it has observed this willingness. The lack of knowledge about an opponent's willingness to employ its military capabilities toward its desired objective provides an incentive for both sides to overstate their willingness in an attempt to mislead their opponent and obtain more of the issues under dispute than they should. Since a state knows that its opponent has an incentive to mislead it regarding its resolve, it is unlikely to believe its opponent's claims of being highly resolved (Blainey 1973, Fearon 1995).

The dynamic described above creates an information problem. To overcome this information problem, a belligerent must send a costly signal to their opponent that communicates it is willing to pay the high costs of war (Schelling 1966). A state can send a costly signal when a state can engage in behavior that only a resolved state would engage in but that a non-resolved state would not. Usually, this behavior consists of a belligerent state's leader tying their hands or incurring costs.

When a leader ties its hands, it is effectively putting itself on a policy course from which it cannot deviate or back down. In other words, the leader of the state takes a position from which it cannot back down from without paying extraordinarily high costs. A leader can most effectively tie their hands by generating audience costs (Fearon 1994, 1997). Audience costs, the costs that a leader will pay from their domestic constituents for backing down from a threat, are another means of costly signaling that scholars have explored extensively in international relations research. For a credible threat sent, through the generation of audience costs, there has to be an audience with

the power to hold its leaders accountable. This has led scholars to suggest that since audience costs lock a leader into a particular policy option, a leader would not be willing to tie themselves to a specific policy outcome unless they were willing to pay the costs needed to see the policy through to a successful end (Fearon 1994).

The assertions made by proponents of audience costs have come under attack in recent years. Scholars have argued that the audience cost arguments suffer from theoretical flaws (Snyder and Borghard 2011, Kertzer and Brutger 2016), scant historical evidence (Trachtenberg 2012, Gartzke and Lupu 2012), and inconclusive large-n evidence (Downes and Sechser 2012). These scholars have called for more specification of when and how leaders of disputing states will generate audience costs.

Audience costs generated during the lead up to the war are already in place at the war's outbreak, as such, they do not reveal new information to the belligerents about the sides' relative resolve after more information about the potential costs of the war has been revealed from the fighting process. In other words, the audience costs generated in the pre-war crisis only suggest that a state is resolved up to the point of the information they had about their opponent's resolve at that time. As the warfighting process reveals new information, they must further update their opponent as to their willingness to bear the costs of war. How can they do this?

A state can also send a costly signal of its resolve through the expenditure of sunk costs. Sunk costs are expenses paid by a state towards achieving a particular objective that the state cannot recoup in the future regardless of whether or not they follow through on their threatened course of action. These costs reveal information to a belligerent's opponent to the extent that they reveal its type. More specifically, the costs that the resolved state is willing to expend will distinguish it from a non-resolved state, since an unresolved state would be unwilling to pay the

high costs that a resolved state would. In a crisis bargaining scenario, these costs usually take the form of military mobilization. While it is cheap for a state to make verbal threats, it is costly for the state to back these threats up with force by mobilizing their troops. Because a state cannot recoup the costs, it expends on military mobilizations, and the costs effectively distinguish a resolve and a non-resolved state as only a resolved state would engage in such costly behavior (Slantchev 2005, 2010, 2011, Tarar 2013).

During a war, a State prefers to send clear information regarding its resolve through its fighting on the battlefield. However, there are many instances when belligerents, in fact, may be highly resolved but due to limitations in their capabilities are not able to signal this through the intensity of its fighting. Another potential means of by which a state can signal its resolve via sunk costs is by expending monetary and political resources on enlisting or compelling a high proportion of its domestic population into its military. Putting a higher percentage of a state's population under arms is costly and can signal resolve, but it is a slow process and cannot signal this information quickly. Additionally, a state's willingness to put a high proportion of their population under arms does not necessarily correspond with their willingness to put them in battle, which would pose much higher costs than merely recruiting them. Regardless, since increasing the size of a military is a slow process and states desire to keep costs as low as possible, states will seek alternative means of signaling during a war. Subsequently, I argue that for states that do not have the capabilities to signal their resolve on the battlefield will still seek to send information regarding its resolve.

Signaling Resolve through Indivisible Issues

I begin with the assumption that warring states are fighting over the values attached to the issue(s) under dispute and that these states desire to obtain as many of the values attached to the issues(s)

as possible. However, wars are costly, with the costs increasing the longer the war last. Since costs accumulate the longer a war lasts, states will seek to keep wars as short as possible. To do so, states will seek to divide the issues along the lines of their relative probabilities of achieving a successful outcome as soon as these probabilities are known. The probable outcome of a war will be known once the two sides' relative capabilities—a state's abilities to fight and win a war—and its relative resolve—the state's willingness to bear the costs in order war to achieve a successful outcome—are known.

As mentioned above, scholars have convincingly argued that a belligerent state will be able to ascertain its relative capabilities vis-à-vis its opponent shortly after the war begins. The belligerent states, however, will have a more difficult time ascertaining their relative resolve. This difficulty stems from the fact that the costs that a state is willing to pay can only be observed by an opponent after they have been spent. Since a warring state desires to pay as few costs as possible to obtain their desired objective, they will attempt to communicate the costs they are willing to pay before they are forced to pay these costs. Since it is costless for a belligerent state to overstate its resolve, states will do so in the hopes of leading its opponent to believe that it has higher resolve than it does, thus leading to a more favorable distribution of the issue(s). Because a state's opponent can anticipate these incentives, it will not find its opponent's claims be credible. For a state to communicate its resolve in a manner that its opponent will believe, it must take actions that distinguish its communications from those sent by an unresolved state. In other words, a resolved state must send a costly signal.

A resolved state wishing to send a costly signal that will distinguish it from a non-resolved state can take steps to either tie its hands or sink costs. During a war, a state will usually attempt to signal its resolve by sinking costs. Specifically, a belligerent state can credibly demonstrate its

resolve through the intensity of its current and demonstrated intentions for future employment of military resources toward the war effort. Since only a resolved state would be willing to expend high resources on the warfighting effort, a belligerent state's opponent will be able to distinguish that the state is resolved and is willing to expend the resources required to see the war through to a successful conclusion. When a belligerent state does not have the capabilities to send a signal through the intensity of its effort on the battlefield, it will seek an alternate means of sending a costly signal. More specifically, its leader must find a means of tying her hands.

A leader can tie her hands by demonstrating that her political survival is tied to their ability to bring the war to a successful conclusion. A leader's best means of tying her hands is by using their domestic population as a commitment device, or as a means of holding herself accountable if she achieves an outcome short of victory. More specifically the leader will create a situation wherein, if the state loses, she will be removed from office leaving her to confront whatever post-tenure fate befalls her. During a war, a leader can do this by raising the stakes of the war (similar to a poker player who goes all in before having to reveal their hand). In the remainder of this section, I will argue that belligerent states can do this through the inclusion of new issues.

An issue is under dispute after the belligerents recognize that possession of the values attached to the issue is contested and the outcome of the war will decide possession of the values attached to the issue. The issues that belligerent states are disputing over are a product of social interaction and subsequently can be manipulated by the actors involved in the dispute. The process of issue manipulation occurs through the use of rhetoric by a belligerent state. Since the issues under dispute can be changed through social interaction, actors will seek to manipulate the issues to strategic effect based upon the salience and divisibility of the new issue. It should also be noted that for an issue to be used as a signal of resolve, it must be widely accepted as being disputed by

the state's populace, in other words, that they see the issue as being at risk of being lost if the war is lost (Goddard 2010).

By adding a highly salient indivisible issue, a state can preclude the possibility of a negotiated settlement. The addition of the highly salient indivisible issue signals that the state is willing to fight to the limits of its resolve and that its resolve is high. This action serves as a costly signal in that it is an action that only a highly resolved state would take. Only a highly resolved state would put an issue under dispute that can only be kept by paying the high costs of a state pushing its opponent to the limits of its resolve.

When highly salient indivisible issues are under dispute wars are more challenging to resolve. This is because the values attached to the indivisible issues are winner-take-all and cannot be distributed among the disputants. Because competitions over indivisible issues are winner-take-all, one side must either concede all values attached to the issue or be pushed to the limits of its resolve. This is because a state will be unwilling to walk away from the table empty-handed until the costs exceed the state's resolve. More specifically, the expected utility, $E(u)$, for continuing to dispute the territory than conceding the territory since, $E(u) = (\text{probability of success} \times \text{value of issue}) - \text{costs}$, will always be higher than the utility of a concession, $u = 0 - \text{costs}$, until the costs of the war exceed the resolve of the state. States fighting over indivisible issues, however, still desire to pay as few costs as possible while obtaining as many of the values attached to the issues under dispute as possible. To do this, one of the states must either concede the issue(s) by accepting defeat or through the creation of a bargaining range through the introduction of a compensatory side payment. As the value of the indivisible issue increases, the more difficult it will be for the opponent to offer an appropriate side payment. If one of the states cannot offer a

side payment, rational states will fight over possession of the indivisible issue(s) until one side reaches the limits of its resolve.

Because war is a costly lottery (Wagner 2000), states will be very hesitant to use highly salient indivisible issues as a costly signal of resolve. I argue that to assess when states will be willing and able to use highly salient indivisible issues as a signal of resolve; three joint necessary conditions must be present. When these conditions are not present, states will be unwilling or unable to use indivisible issues as a signal of resolve. By necessary conditions, I mean to suggest that the condition must be present for a state to be willing to signal by means of indivisible issues, but none of these conditions are independently sufficient to lead a state to use indivisible issues as a signal of resolve (Goertz and Starr 2003): 1) The state is highly resolved, but its opponents doubt its resolve. 2) A leader has available highly salient indivisible issues to attach to the issues already under dispute. 3) The state is currently restrained from signaling its resolve on the battlefield but desires to signal that it will be able to use its latent military capabilities to bring the war to an end in the future successfully. In Figure 1, I present a figure showing the relationship between these three necessary conditions and the decision made by a state to signal through highly salient indivisible issues. While I do not anticipate that the three necessary conditions must occur in any specific order, I do, however, contend that all three of these conditions must be present before a state is willing to use an indivisible issue as a means of signaling resolve.

The first of the three necessary conditions are that a state's opponents or allies are uninformed, or misinformed, regarding the state's resolve. The state's opponent believes that it has low resolve, but the state is highly resolved. A state will desire to update its opponent in the hopes that the two sides can come to a convergence regarding relative resolve and can bring the war to an end. Although the incentives to update its opponent exist when there is a disparity

between a state's resolve and the level of its resolve as perceived by its opponent, this disparity has to be reasonably large before a belligerent state will be willing to signal through a highly salient indivisible issue. For purposes of theoretical development and empirical analysis, it is essential to provide specifics regarding how to identify when and why these disparities are likely to exist.

A state's resolve will be thrown into doubt when it is thought to be fighting over issues that are of little value to it, at least in the view of the opposing state. These doubts can arise for many reasons. The first is that states will be more likely to disbelieve that their opponent is willing to pay the high costs of winning a war the further the fighting is from its homeland. The first reason for this is that the further the fighting is from the homeland the costlier it will be to fight the war (Markowitz and Fariss 2013). Not only will the fighting be costly, but a belligerent's opponent will doubt that a state's domestic population will be willing support the conflict as it is unlikely to affect the domestic population's security or immediate wellbeing. This will be the case when the belligerent state's opponent's actions do not obviously threaten the other state's security.

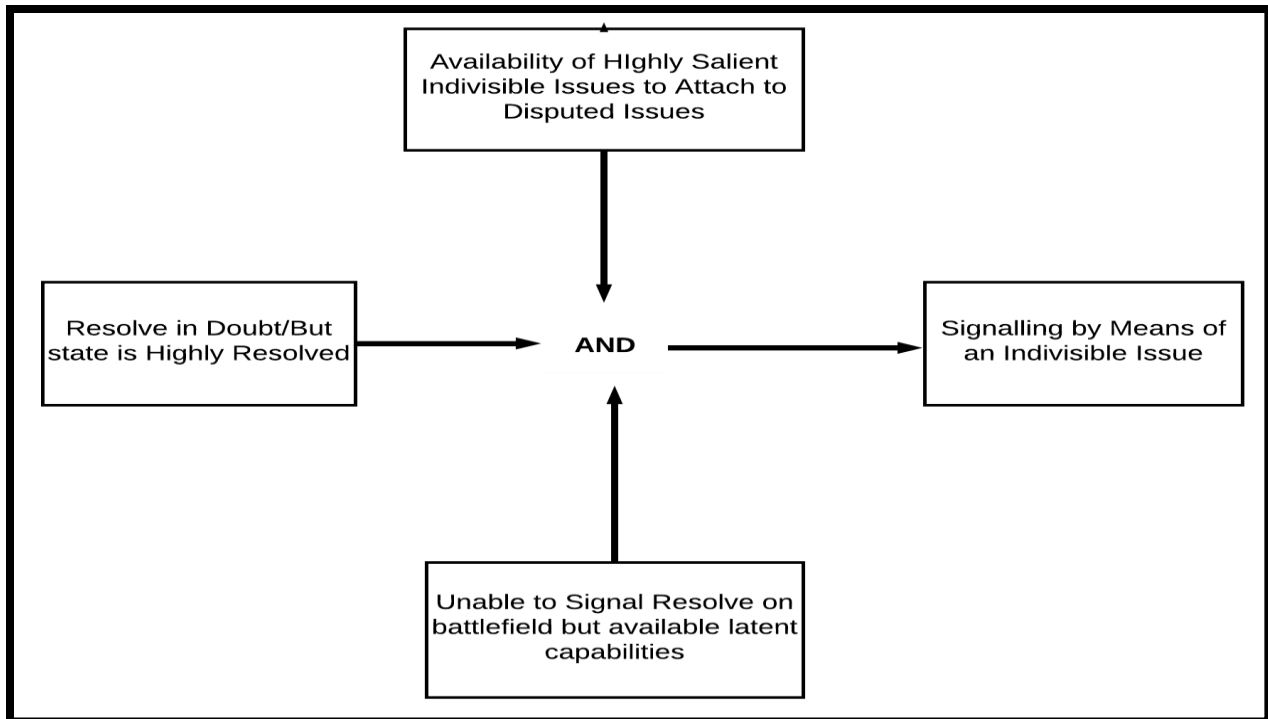


Figure 3: Necessary Conditions for a State to Use an Indivisible Issue to Signal Resolve

The second scenario is similar to the first. A state’s resolve will be doubted by its opponents and allies when the state has shown an unwillingness to defend the values attached to the issue from past attacks. Through past inaction the state has developed a poor reputation for defending this issue, making its claims of resolve less credible (Crescenzi 2007). This lack of reputation for resolve may also exist when a state has fought less costly wars against less militarily capable states to defend the values attached to an issue but has not shown itself willing to take on the costs of facing a militarily powerful state.

A state’s resolve will also be in doubt when the issue the state is fighting over has not been fought over before or is part of a new norm. The prominence and importance of norms in the international system fluctuate over time (Randle 1987). An example of this dynamic is the rise to prominence of the territorial integrity norm after World War II (Zacher 2001).

Finally, a warring state's opponent (or allies) will doubt its resolve when there is a significant proportion of the population, or an enabled opposition, that oppose the state's involvement in the war or its current aims. This will lead a state's opponents and allies to doubt that the state will be able or willing to pay the costs of fighting a war to the limits of what it claims its resolve. Specifically, when a state's domestic population opposes a war, opponents and allies will believe that the state will be unable to fully draw upon the state's resources in the case of a long drawn out war.

For the issue placed under dispute to serve as a costly signal, it must be sufficiently valuable (salient) as well as indivisible. While states may have the desire to signal through means of a highly salient indivisible issue, an indivisible issue of sufficient value may not exist. To assess whether such a highly salient indivisible issue will be available for the belligerent to use as a costly signal, it is essential to be able to identify issues according to their salience and divisibility.

The divisibility of a single issue is dichotomous, it is either divisible, or it is not. An issue is considered divisible if it cannot be divided without losing the value that those that desire the values attached to it. An issue can be indivisible either because of its physical properties or due to symbolic value that actors ascribe to the issue (Duffy-Toft 2006). An example of an indivisible issue would be something such as a piece of territory that is considered sacred by the people that possess or desire to possess it. The land can technically be divided, but if it were to be divided, it would lose the value that those that desire the land. Since attached symbolic values can make the issues it is attached to indivisible, when an issue such as ideology, religion, are ethnicity are attached to issues under dispute these issues are likely to be seen as indivisible.

The second dimension of an issue that I consider is issue salience. Issue salience is determined by assessing the number of people who possess (or will possess) the values attached

to the issue (Diehl 1992). The best means of assessing the number of people that an issue will benefit is by determining whether an issue is a rival or a non-rival good. A non-rival good is a good where one person's consumption of the good does not affect the ability of others to consume the good. On the other hand, rival goods are those where another person's consumption of the good will limit the ability of others to consume the good (Olson 2009). Since more people can partake of non-rival goods without diminishing their value, more people will value them. To clear, in this context the concern is whether or not an issue is rival or non-rival within the borders of a state and not whether the issue is rival or non-rival between states or among states.

The effect determines the intensity with which these values are held (or the number of values that they possess) that it will have on the day-to-day lives of those affected by losses or gains of the values attached to the issues. The effect can be the product of psychological gains or losses, material gains or losses, or both. This suggests that the loss of socially constructed indivisible issues such as religion, ideology, or national honor might not physically affect the day to day lives of a nation's population, but may have a dramatic impact on the day-to-day psyche of those affected by the loss. Regardless of the type, the loss will have the same effect.

This line of argumentation suggests that the issues available to a state to send a costly signal of its resolve will be widely shared intangible issues, such as religion, ideology, and ethnicity among others. States that do not have widely shared values, in other words, states that are have high levels of fractionalization on all of these dimensions will be unable to signal its resolve employing a highly salient intangible value. For example, during World War I, the Austrian Hungarian Empire had high levels of ethnic fractionalization, religious fractionalization, and there was widespread discontent with the monarchy based in Vienna (Otte 2014). Because of the country's fractionalization, there were no highly salient intangible issues that the leaders of

Austria-Hungary could attach to the issues already under dispute to signal its resolve. It should be noted that states can only use issues as signals of resolve, that its population is likely to believe is genuinely under threat and will be lost if the war is lost. For example, if a democracy were fighting another democracy, the state's population would be unlikely to believe that if the war is lost damage would be done to the state's status as a democracy.

The final necessary condition that must be met before a state will be willing to use a highly salient indivisible issue as a signal of resolve is that it must be unable to signal the high level of its resolve on the battlefield, but it anticipates that at some point in the future it can turn its latent capabilities into realized capabilities. The inability to signal resolve on the battlefield will usually be due to a state's lack of pre-war preparation to fight the war it is currently fighting or domestic impediments that keep the state from employing the full extent of its military capabilities or a mix of both in the present. However, it is essential to point out, that for the state to be willing to use a highly salient indivisible issue as a signal of resolve, it must have the capabilities to bring the war to an end and the anticipation that it will be able to employ these resources towards the prosecution of the war at some point during the warfighting process.

While signaling resolve through the means of highly salient indivisible issues is not strictly a democratic phenomenon, the conditions necessary for a state signal by this means are more likely to be present among democracies for a number of reasons. Domestic impediments keeping a state from employing the full extent of its military capabilities are more likely to be found in democracies. In democracies, the empowerment of opposition will slow down the transition from latent to realized military capabilities for even the most popular wars (Reiter and Stam 2002).

Additionally, because democratic governments have incentives to provide their relatively large winning coalition (usually somewhere near half or more of a state's population) with the

creation or maintenance of public goods, it will be more likely that a state will have highly valued non-rival issues to put under dispute, such as ideology, which has been commonly employed as a signal of resolve. Along these same lines, since democracies have stronger incentives to maintain or capture intangible values, they will be more likely to have highly salient indivisible issues to use as a costly signal of resolve.

Finally, a large body of literature has shown democratic leaders are better able to tie their hands, thus signaling resolve dispute. This increased ability stems from the fact that democracies have institutions in place to more easily remove leaders if the leader does not follow through on their promised course of action. In this case, the leader will be removed if they do not win the war and thus maintain or obtain the possession of the disputed indivisible issue (Partell 1997, Prins 2003, Schultz 1999, 2001).

Assessing the Necessary Conditions: The Case of Britain in the First World War

In this section, I employ a case study to assess whether my necessary conditions were present before the employment of indivisible issues as a means of signaling. I use this method to assess whether or not the necessary conditions that I have specified as explaining when and why states will use highly salient indivisible issues to signal resolve are present, a task that is best achieved through case study analysis (George and Bennett 2005). Because I am only examining one case, it is essential to make the distinction that this is not a test of my theory. Ultimately, I am looking at a case where the proposed necessary conditions are most likely to be present and lead to the effect that I specify. Although World War I Britain is a most likely case, as I had ex-ante knowledge that the issues expanded during the war, the hoop tests and smoking gun test I specify to assess whether these conditions are present are not easy tests.

Employing a plausibility probe research design on a single case means that I cannot directly generalize my findings to explain behavior beyond that of World War I Britain. However, I suggest that this examination is useful in that it allows me to show the plausibility of my theory, which will suggest the need for a more in-depth cross-sectional analysis in the future (George and Bennett 2005). At this time, however, the fine-grained data needed to test hypotheses derived from my theory on the entire population of wartime belligerents is not available. However, as I will demonstrate below, I find evidence to suggest that my theory can explain the behavior of Britain and will likely explain belligerent states' behavior more broadly. Ultimately, the findings of this analysis suggest that future researchers should invest the resources needed to perform a large-N analysis of the phenomenon.

Since I propose three necessary conditions, my analysis must show that the three-necessary joint necessary conditions I specify were present when a state added new highly salient indivisible issues and that this did not occur when any one of the three necessary conditions were not present. To demonstrate this, I will make my case that the three necessary conditions were present at the two points during the war, October 1914 and January 2018, that Britain added new indivisible issues and that when one or more of the three necessary conditions were not present Britain did not add highly salient indivisible issues.

The experience of Great Britain during World War I represents an interesting case upon which to explore my theory. During the July crisis, there was a considerable amount of doubt among the other great powers contemplating military action, and Great Britain itself, if Great Britain would ultimately enter the war. When Great Britain finally decided to enter into the First World War, they argued that their entrance was a result of their desire to uphold their alliance obligations with France and to protest the violation of a treaty asserting Belgium's neutrality (Otte

2014). At the outset of the war, Edward Grey, the Foreign Minister suggested that unlike the other parties involved in the war Great Britain had "nothing that we particularly sought or had entered the war to obtain for ourselves" (Grey 1925, 163).

In the opening days of the war, Prime Minister Harold Asquith in a speech to parliament given on April 6, 1914, outlined the two reasons Britain was fighting the war, or the underlying issues that were under dispute. He said:

If I am asked what we are fighting for, I reply in two sentences. In the first place to fulfill a solemn international obligation, an obligation which, if it had been entered into between private persons in the ordinary concerns of life, would have been regarded as an obligation not only of law but of honor, which no self-respecting man could have repudiated. I say, secondly, we are fighting to vindicate the principle that small nationalities are not to be crushed, in defiance of international good faith, by the arbitrary will of a strong and overmastering Power. (Asquith 1917, p. 7-9)

In a speech to parliament on August 27, 1914, restated that these were the purposes of Britain entering into the war. On September 4, Asquith tried to convey the high value that Britain placed on these issues in a speech made to another crowd. Suggesting that aims of Britain in the war were not just material but were also spiritual, and they touched upon the very core of what it meant to be a freedom loving Brit. He continued to make these claims throughout August and September 1914, to audiences throughout the United Kingdom. (Asquith 1916).

The issues under dispute were far more valuable to the British than Britain's opponents believed. To the British, the sanctity of international treaties—in this case, the Treaty of London signed in 1839—its morality, and the stability of the international system, which it had primarily established, was threatened to the core by Germany's actions. This misperception by Britain's adversaries was a fact that Asquith and other members of his government acknowledged. Asquith pointed to this in a speech that he gave in Scotland on September 18, 1915:

Since I last spoke some faint attempts have been made in Germany to dispute the accuracy and the sincerity of this statement (that Britain was fighting to uphold international treaties) of our attitude and aim. It has been suggested, for instance, that our professed zeal for treaty rights and the interests of small States is a new-born and simulated passion. What we are asked, has Great Britain cared in the past for the treaties of smaller nationalities...? (Asquith 1916, p. 26)

When the German leaders heard Britain's justifications for entering into the war, they thought it foolish that Britain would go to war over issues that only had the worth of a scrap of paper," and instead believed that England's entrance into the war was thinly veiled pretext to obtain material wealth (Horne 1923). If the war had ended quickly, as anticipated, Germany's misperception regarding Britain's resolve would not have mattered.

From the outset, things went badly for allies. The Germans made significant gains, conquering all of Belgium and large portions of Northern France. The British were concerned that the Germans would soon conquer France, putting a powerful hostile military power within striking distance of Great Britain. Britain, although having some success, due to the size of its army was unable to make a contribution needed to tip the war in favor of the allied effort (Keegan 2001). Regardless of the early success by the Germans on the western front, information from the front regarding the relative strength of their adversaries was difficult to ascertain, with many of the battlefield decision makers merely guessing as to the intentions and moves of their adversaries. However, by the end of 1914, the relative battlefield strength of the belligerents became much clearer as the Allies began exchanging victories with Germany, along the Western Front, and it became clear that the power of the states was relatively equal. This meant that it would take intense fighting and high costs to remove the German military from their strategic strongholds. (Meyers 2006).

Britain, unlike the other European powers that had entered into the war in August 1914, did not have a large army. Throughout its history, it had been heavily dependent upon naval power

for its security. This compounded with the fact that the army that Britain did maintain was scattered throughout the world to ensure the security of far-flung imperial territories. This led Britain to maintain a much smaller force than either their opponents or their allies. Compared to its continental opponents, Britain's army was small. In fact, as of August of 1914, France had an army of 3.2 million while Britain was only able to put 80,000 men in the field (Bourne 1989). The heavy fighting at the outset of the war stretched the capacity of the relatively small army.

At this point, Britain's war effort was close to collapse, and there were doubts among its allies and its opponents as to whether it would be willing to continue to fight the war. At this point, the Germans anticipated that they could easily crush the small British army and force them out of the war. The French and Russians, Britain's main allies in the war effort, also doubted its resolve fearing that as the costs of the war came into more precise focus, that it would seek a separate peace. The sides were so concerned about this in the opening months of the war, that on September 4, 1914 they signed the London Agreement. The document stated that no ally would separately seek peace with the enemies without the consent of its fellow allies (Horne 1923).

To stay in the fight and signal its resolve on the battlefield, the British rapidly needed to raise a larger fighting force (Bourne 1989). However, members of the British government were hesitant to use conscription to increase troop number due to high domestic political costs and the tenuous position of the Asquith government (Gregory 2008). To do this, the British government would be dependent upon the willingness of the British people to enlist in the warfighting effort. This is not to suggest that Britain was not capable of becoming a major force in the land war. However, it does suggest that it was not clear if they would be willing to do so. To do so, it is forced to rely heavily upon its domestic population to make much greater sacrifices in the name of the war effort. These efforts would turn out to be problematic and would further throw British

resolve into doubt and leave the British desperately looking for a means to signal that in spite of doubts, they were, in fact, resolved.

Britain, which had the largest economy of the combatants, had vast amounts of industrial capabilities, manpower, and capital to put toward the war effort.¹⁸ In fact, not only was Britain's economy the largest per capita, but it was the only country that had a growing economy at the war's outbreak. However, as mentioned above, to be an effective fighting force, Britain needed to turn its latent power into realized power for both reasons of domestic politics and difficulties experienced in harnessing Britain's privately owned industrial power towards the war effort. This would end up being a task that took longer than expected.

While there had been an initial surge in enthusiasm and euphoria for the war throughout Great Britain, by the end of September 1914, it became clear to the British public that fighting the war would be very costly.¹⁹ There were questions among the British elites regarding the loyalty of the British working class, which made up 80 percent of the British population, to the government. Additionally, as it became clear that the war would last longer and be bloodier than what had been initially anticipated, the unease among the working class about the war, which would withstand the worst of the war effort, began to grow. To continue to fight the war, the British needed the working class to contribute by providing manpower, not only to the military but also in crucial economic sectors that would help to determine a successful outcome in a long drawn out war (Gregory 2008). The mistrust of and the reliance upon its working class made British policymakers hesitant to raise an army using conscription as its continental peers had done. Not only did British policymakers believe that that conscription did not align with liberal values they feared the

¹⁸ In Appendix H, I present graphs that show the combatants' GDP per capita at the outbreak of the war using historical data taken from Jutta et al. (2018)

¹⁹ Appendix J shows a graph detailing the weekly casualty numbers throughout the war with data taken from WO 394/20.

working class would not tolerate conscription unless all other options for raising an army were exhausted (Bourne 1989). This led Britain to rely exclusively on voluntary enlistments which hampered the speed with which a sufficiently sized army could be raised (Simkins 2011).

The increasing evidence of Britain's inability to be an effective fighting force in the near-term is evident in the daily recruiting returns provided to Asquith by the War Office (WO 162/3). Figure 2 (see below) shows British daily enlistment numbers, excluding Sundays. After a sharp increase in enlistments during the end of August and the beginning of September, the British army's numbers began to swell rapidly. In fact, Britain had to take drastic measures to accommodate the large number of men that heeded the call to service. However, as the casualties started to in late September and October, the number of men willing to enter into the service dramatically decreased at around the time casualties rose and members of the population began to realize how violent the war would likely be. On top of this, the large number of men signing up in the early months meant that the availability of labor in Britain began to decrease. However, the demands of the war effort increased the numbers of workers needed, making the labor of those men who stayed home more much valuable and personally lucrative. This made it all the more difficult for British to obtain men for the war effort as fewer British men were willing to enlist. The British, however, were hesitant to switch to growing its military through conscription, as this was thought (Simkins 2014).

Britain's rapid drop-off in its recruiting efforts is most clearly evidenced by a comparison of the recruiting returns for September 1, 1914, with October 1, 1914. On September 1, 27,814 Britons enlisted in the military. One month later, recruiting returns stood only at 2,727 (WO 162/3). These numbers and the broader trend that they represented gave members of the government concern regarding its ability to field an army large enough to win a continental war of attrition. To

remedy the shortfall in enlistments, the government took what they considered to be desperate measures, lowering the once ironclad requirements for the minimum height and weight of recruits. Additionally, the government invested heavily in an aggressive advertising campaign, something they had not done in previous wars or the opening month-and-a-half of World War I (Simkins 2007).

The relatively small size of Britain's army at the outbreak of the war was compounded difficulty it was having in raising an army the requisite number of troops, suggest that although it had latent capabilities to be a force on the battlefield, it would not be able to do so in the foreseeable future. This situation fits with the necessary condition specified in my theory. Specifically, that before a state is willing to use a highly salient indivisible issue as a signal of resolve, it will possess latent capabilities. Britain's latent capabilities would allow it to achieve military victory at some point in the future, but it faced constraints that kept it from employing these resources toward the war effort into the foreseeable future.

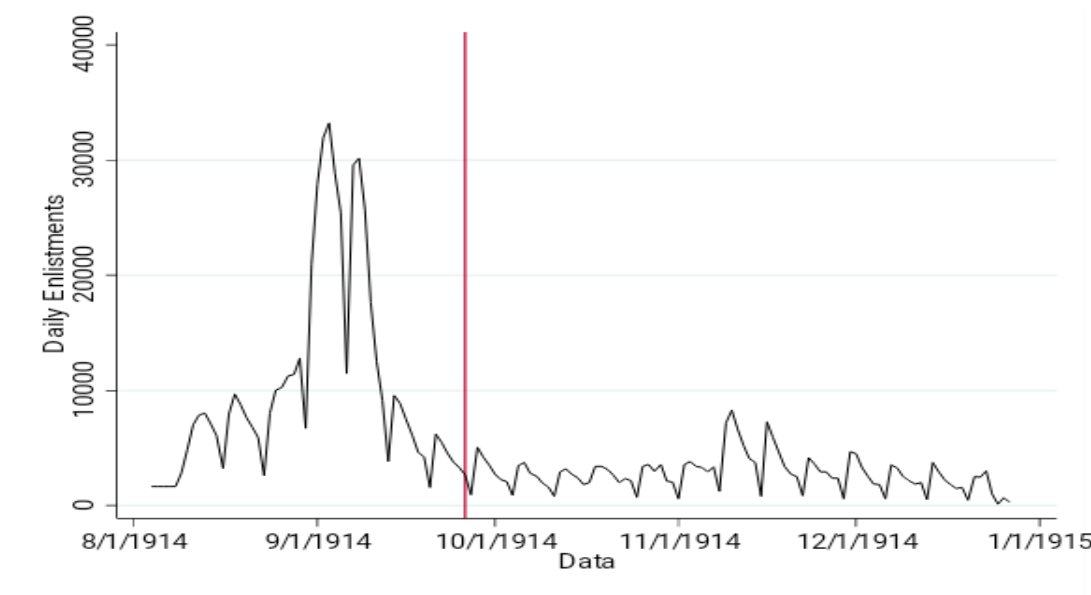


Figure 4: Daily British Enlistment Numbers (August 1914-January 1915)

Throughout Britain, democracy and the ideals and norms attached to it (the rule of law, individual liberty, mutual respect, and tolerance) were highly valued by a large proportion of the population. During the 19th century, the British electorate grew from offering the franchise only to owners of freehold property to allowing all men who owned land or paid at least £10 of annual rent. The proportion of the population that could vote in England and Wales rose from around approximately 366,000 men in 1832 to just under 8 million in 1884. The reforms that led to the expansion of the franchise during the 18th century (specifically the Reform Acts of 1832, 1867/8, and 1884) were the results of widespread agitation by middle and working-class members of British society demanding representation in government. The working class made up a vast majority of the population (80 percent), and these hard-fought gains were dearly held by those making up this group of people (Machin 2001).

The long-lasting and widespread agitation for more democracy by a broad swath of the country's population, suggest that the majority of the population highly valued the liberal values associated with democracy. The core values attached to democracy, similar to other ideologies, are indivisible, meaning that the values associated with a democratic form of government are dichotomous, meaning that they will lose their value in the eyes of those that possess them if they are divided through compromise. The prevalence and the high value attached to democracy suggest that British leaders had highly salient indivisible issues available to be used to tie British policymakers' hands and send a costly signal of resolve.

British government officials, in the early months of the war, insisted that they were willing to see the war to an end if necessary, in spite of the fact that the evidence countered these claims. This became a more pressing issue as the war dragged on and it became clear that a strategy of attrition was the only means by which Britain could win the war, a feat that would come at very

high costs. This was a reality acknowledged by Asquith and the government in a speech given on September 25, 1914:

The prophet of old spoke of the 'confused noise of battle and garments rolled in blood,' but in these modern days, with the gigantic scale of the opposing armies and the scientific developments of the instruments of destruction, war has become an infinitely more devastating thing than it ever was before (Asquith 1917, p. 39).

Since the costs of the war were enormous and the British anticipated that these enormous costs were going to continue into the future, the British sought to signal to their opponents and their allies that they were willing to take on these high costs. As mentioned above, to signal the limits of their resolve, they had strategic incentives at this point to add a highly salient indivisible issue.

To add salient indivisible issues to those already under dispute, Asquith, and other members of the government needed to identify highly salient intangible values that would legitimate their actions and subsequently send a signal of resolve. The chosen issues were the preservation of liberal ideals. Specifically, the defense of international law, democracy, and the survival of democratic citizens in Europe. These issues were especially valuable because they were widely shared and non-rival, meaning that one person's consumption of the issue does not inhibit another's ability to consume the values attached to the issue. These themes appeared early on but became part of an explicit attempt at signaling by high-ranking British policymakers in late September and October of 1914. Along these lines, in a speech given on October 14, 1914, in Cardiff, Prime Minister Asquith said:

We believe, old-fashioned people as we are, in the sanctity of treaties, that the weak have rights and that the strong have duties, that small nationalities have duties, that small nationalities have every bit as good a title as large ones to life and independence, that freedom for its own sake is well worth fighting for today as it ever was in the past. (Asquith 1917, p. 51)

The following month, in another speech, Asquith made it clear that Britain would not agree to any peace or, "sheath her sword," until the values over which they were fighting were secured and

Prussian militarism was destroyed. This suggests that at this point Britain not only sought to uphold treaty terms by compelling Germany to withdraw from Belgium but also sought to destroy Germany's ability to threaten the personal freedom of Britain's and other European powers in the future. Asquith reinforced this message in a speech later in the month when he argued that Britain would not seek peace until they had obtained a victory that crushed the "menace of Prussian militarism" ensuring the safety and democracy of freedom in Europe (Asquith 1917, p. 66).

In figure 2, I denote the day of the first speech wherein democratic values and issues were included with a vertical red line. As can be seen in the figure, Asquith added these issues after recruiting numbers had reached their lowest point, and British resolve was thrown into further doubt. This provides substantial evidence that my theory, at least in this case, as all three necessary conditions were present at the time that Britain sent the signal.

Although the German's intentions did not change during this period, the meaning attached to their actions and the issues that these actions posed a threat to did change due to policy choices of British leaders. After Britain added the issues of democracy as well as personal and national freedom to those it was already disputing over, it had tied its hands. To lose the war would mean that the value attached to these issues would be lost. These issues were highly salient among Britain's domestic population, and the leaders or government that lost these issues to the Germans would most likely lose their hold on political power. Because of the additions of these highly salient indivisible issues, Britain was effectively able to tie its hands. This allowed it to signal its intentions to its opponent credibly. Specifically, that the only acceptable outcome for Britain was not just victory, but a victory that allowed Britain to capture all of the issues it had under dispute and that Britain was willing to pay extraordinarily high costs to achieve this objective. Although Britain had credibly communicated its resolve, Germany chose not back down, instead choosing

to continue to fight the war. Germany, like Britain, was fully resolved to see the war to an end, meaning that they would not prematurely accept a peace that did not ensure that they obtained their objectives (Fischer 1967).

The fate of Asquith, and his Liberal government, at the end of 1916 is evidence that the inclusion of highly salient indivisible issues ties a leader's hands and imperils her hold on power if she is to concede or lose the issue. As the war wore on and the number of casualties grew larger than anyone had anticipated, Asquith and other members of his Liberal cabinet began looking for a way out. In December of 1916, it became public that Asquith had been considering ending the war and suing Germany for peace. The public disclosure of these internal deliberations led the downfall of the Asquith government and brought Lloyd George and his Conservative Allies into power on the understanding that they would fight the war to the limits of Britain's resolve (Bourne 1989).

For nearly three years after Asquith's last speech, British policymakers chose not to add to or clarify the issues for which they were fighting for. In fact, when asked for further clarification on the specific issues for which Britain was fighting for, Asquith told those asking him to refer to his speeches, referenced above, in the opening months of the war (Rothwell 1971). Although highly salient indivisible issues were available at this time, Germany knew that Britain was highly resolved. This knowledge came through the costly signal sent in 1914 as well as the high costs Britain had paid during in over two years of intense fighting. This is not to suggest that Britain's resolve was not thrown into doubt during this period, it is to suggest, however, that they could update their opponents regarding its resolve on the battlefield. During this period Britain military production grew to the point that it outpaced that of its opponents (Gregory 2006) and the size of

its army grew from 500,345 soldiers in August of 1914 to 3,793,088 in July 1918 (WO 394/20).²⁰ According to my theory, since two of the three specified necessary conditions were not present Britain had no incentive to signal by means of highly salient indivisible issues. Because of the lack of incentives, the issues over which the states were fighting over remained stable until January of 1918 after the incentives to signal employing a highly salient indivisible issue reemerged.

By the spring of 1917, battle casualties had thrown Britain's willingness and ability to continue fighting the war into serious doubt. Especially troubling for the British during this period is that they did not have an estimate, let alone an accurate estimate, of the number of casualties they had inflicted upon the Germans. In fact, from October 1916 until July 1917 the British had only limited information regarding German casualties and the size of its potential recruiting pool. After July 1917, however, Britain did not have enough information to even come up with an estimate of German casualties and available manpower (WO 394/1-10). This was a problem that was not remedied until September 1918—one month before the war was to end. The belligerents on both sides had serious doubts about how long the other side could continue to take the high costs of war (Meyers 2007).

The scenario described above created a vast amount of uncertainty among British policymakers regarding their relative resolve. British policymakers began to question how long they could continue to fight. Edward Stanley, the Secretary of State for War, "So far from there being any question of our breaking through the Germans, it was a question of whether we could prevent the Germans from breaking through us" (Rothwell 1971, p. 144). Lloyd George feared that the war would go on for another two years and by that point, the costs of war would make any victory pyrrhic. By providing accurate information regarding its resolve, could reassure its wary

²⁰ See Appendix K for a graph showing the growth in the number of men in Army during the duration of the war with data for the graph being taken from WO 394/20.

allies and force Germany to do a cost-benefit calculation regarding its willingness to continue the fight. American's were concerned that its entrance into the war would encourage Britain to reduce the intensity of their effort and lean heavily upon the United States to end the war. Additionally, given the length of the war and high levels of uncertainty, neither side knew how long the other would be willing to continue the fight or when the other would reach its breaking point.

In spite of the high costs of the war and the fear that any victory would be a pyrrhic, Britain remained highly resolved. This high-level resolve is evidenced in the fall of the Asquith government for contemplating peace negotiations and the rise of the George government, which was very public and uncompromising in its pursuit of an absolute victory even during the winter of 1917 and 1918 (Bourne 1989). The war continued to be seen as a war over the survival of democracy at home and abroad, an issue over which Britain, and the British people, were unwilling to compromise over (Mulligan 2014). The most persuasive evidence of Britain's resolve during this period was the fact that it did not seriously consider or make any overt or covert attempts at peace negotiations with the Germans (Rothwell 1971). In spite of its high resolve, Britain was becoming increasingly unable to signal its resolve on the battlefield. For the two sides to be able to make informed, rational, decisions about whether or not they should continue fighting they needed to know their relative resolve, information that was becoming increasingly difficult to communicate on the battlefield.

After nearly two and a half years of intense fighting, decision-makers in the War Cabinet and the War Office began to express serious concerns about Britain's ability to continue fighting the war. These doubts were especially pronounced after the exceptionally high costs of the three-month Battle of the Somme as well as other costly battles throughout the end of 1916 and 1917. More troubling, in spite of the high number of casualties, the allies made very little progress

towards their objectives. In the Somme alone, British casualties were an incomprehensible 419,654 men with approximately 131,000 being battlefield deaths (Hart 2011).

Even before the costly battles of 1916 and 1917, Britain was facing a serious problem. More men were needed to fill vacated positions along the Western Front than were available for conscription. This problem was compounded by the fact that Britain was also forced to find a large number of men that were needed for the Mediterranean and Northern Africa theaters (Hart 2005). Britain had already instituted conscription in the first half of 1916, a decision that came with high costs domestically. At first, the draft only targeted unmarried men between the ages of 18 and 40. However, as the war wore on and the deficit between the number of men needed for the fighting effort and the number of unmarried men of fighting age grew, conscription expanded to include all married and unmarried men of fighting age. In spite of the introduction and expansion of conscription, it was still unclear to policymakers how they could manage to maintain the war effort domestically while continuing to put enough men in the field (Meyers 2007).

I demonstrate the recruiting crisis that Britain found itself in at the beginning of 1917 in Figure 3 (below). This graph provides the numbers for the troops required, what they obtained. The graph shows that at the beginning of 1917, the British Army needed 100,000 recruits but was only able to obtain 51,131 recruits, leaving it with a recruiting deficit of 48,869 men. As the year went on the deficit between what the number of troops the British needed on the front and what they were able to obtain grew rapidly. By September 1917, the British needed 361,105 soldiers on the front, they only able to obtain 21,150, leaving them with a deficit of 339,995 men. The British anticipated that there were 2.5 million men of military age (excluding Ireland), but that this would quickly dry up. The War Office questioned how much longer the war could go on from a pure numbers standpoint thinking that they would only be able to fight until the end of 1917, regardless

of the domestic politics (WO 162/26, 162/27). Making matters worse, at least from Britain's point of view, was that the French Army's morale was low and it appeared that their fighting efforts were on the brink of collapse, culminating in large-scale mutinies in April 1917 (Meyers 2007). Although Britain desired to increase the intensity of the fighting in the hopes of achieving a relatively quick decisive victory on the battlefield, the inability to replace fallen soldiers on the front line limited the tactics it could employ while preserving its ability to continue fighting the war into the future (Rothwell 1971).

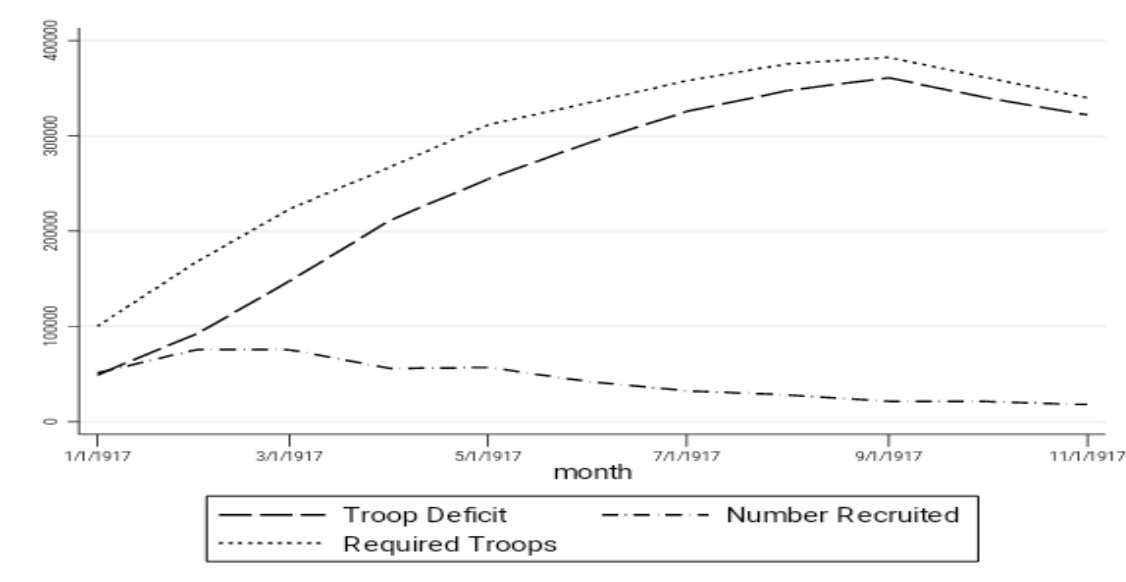


Figure 5: Monthly British Troop Recruiting Deficits, January-November 1917

As the evidence by Figure 3 (above), at the outset of 1918, the ability of Britain to carry on the war effort was in serious doubt. The British were in a war of attrition, and the limits of both sides resolve were still unknown. Allies began to worry that their partners would seek a separate peace, especially after the fall of the Russian government and its withdrawal from the allies' war effort (Meyer 2005). Although the United States had already entered into the war on the side of the allied partners, it would be unable to flex its full military muscle until some point in mid to late 1918, a point that many feared might make any American impact on the war too late (Yearwood

2009, Meyer 2005). To win the war, Britain needed to signal to Germany that it could stay in the war until the Americans were fully involved.

The third necessary condition that must be present before a state will be able to use a highly salient indivisible issue is that a highly salient indivisible must be available to be attached. While the Asquith government had attached the protection and survival of democracy in Europe to the outcome of the war in September 1914, it had not made the internationalization and promotion of democracy central to its war efforts. The promotion of democracy and the anticipated promise of peace that a liberal/democratic world order would lead to had become increasingly important to the British population during the war years. At the outset of the war, very few took seriously the idea that the war would end with liberal democratic values not only secured at home but also in previously non-democratic governments and an international institution based upon these liberal values. However, as the war wore on British policymakers and citizens believed that the only post-war peace that could last was one based upon democratic norms. The internationalization of democracy could only exist if Britain were able to achieve a victory that crushed German militarism but one in which the monarchical Prussian regime stepped down and was replaced by a new democratic government. While at the outset of the war a majority of Britons were hesitant to insist on anything as drastic as regime change and democratization, by the end of the war such a move had widespread and popular support. Additionally, support began to grow as an international institution, founded upon liberal democratic values, which would help to promote international cooperation as well as peace (Yearwood 2009). These democratic values were both highly salient and indivisible meeting the requirement for the addition of these issues to be useful as a costly signal.

As before, to clarify its resolve, Britain needed to send a costly, and therefore credible, signal. As before, it sent a costly signal through the addition of a highly salient indivisible issue. Recognizing the need to clarify its resolve and its war aims, the British war cabinet created the National War Aims Committee on August 21, 1917. The purpose of this committee was to clarify the nation's war aims, which had not been added to or changed since September of 1914, in the hopes that it would make clear to both domestic and international audiences the type of war ending outcomes it could accept. The British felt the need to send a public signal to Germany that it would be willing to accept nothing short of a victory that crushed Germany's ability to make war in the future (Rothwell 1971). George was noted as saying in a War Cabinet meeting, "...no German government can concede all that we were bound to insist on. Hence it was essential that this statement should be regarded rather as war move than as a peace move" (Rothwell 1971, p. 153).

The work of the War Aims committee led to a speech given by Lloyd George on January 5, 1918, where he publicly asserted that Britain sought a new World Order. In this speech, George would add new highly salient indivisible issues, like the issues added before tied Britain's hands because if it lost the issue, it would threaten the survival of the British government. Lloyd George, in what would come to be known as his *War Aims* speech, added new highly salient indivisible issues to the ones that his country was already fighting to obtain:

We have arrived at the most critical hour in this terrible conflict, and before any government takes the fateful decision as to the conditions under which it ought to continue the struggle, it ought to be satisfied that the conscience of the nation is behind these conditions, for nothing else can sustain the effort which is necessary to achieve a righteous end to this war...I then we are asked what we are fighting for, we reply as we have often replied: we are fighting for a just and lasting peace, and we believe that before permanent peace can be hoped for three conditions must be fulfilled; firstly, the sanctity of treaties must be established. Secondly, a territorial settlement must be secured, based on the right of self-determination or the consent of the governed, and, lastly, we must seek by the creation of some international organization to limit the burden of armaments and diminish the probability of war. (George 1918)

While the first of these war aims existed since the beginning of the war, Britain included a provision, based upon its long-held Liberal ideals that the end of the war should not only guarantee of a lasting peace but that it should do this through a remaking of the international order. This new world order would ensure the enforcement of treaties and an international organization based upon liberal ideals that would encourage peace but promote the spread of democracy. Not only would Britain push for the safety of democracy at home and abroad, but it would push for democracy in foreign lands. In this speech, George asserted that "an autocratic military constitution was a dangerous anachronism in the Twentieth Century." Further, he suggested that "Our point of view is that the adoption of a really democratic constitution by Germany would be the most convincing evidence that in her the old spirit of militarism has indeed died... (George 1918)."

As I anticipated in my theory, when all three necessary conditions were present, Britain updated Germany regarding its resolve through the addition of new indivisible issues. As was the case after the first signal was sent through the addition of new indivisible issues in September 1914, Germany continued to fight, as they expected that the costs of continuing the war would not exceed their resolve, or that the expected utility of continuing to fight still exceeded the costs of sacrificing all of the values attached to the issues under dispute.

By November 11, 1918, Germany had hit the limits of its resolve having reached a point where it could no longer rationally continue fighting, knowing the costs that Britain and its allies were willing to pay and that continued fighting exceed would exceed the costs that they were willing to pay. Germany capitulated to all of Britain's demands and vacated Belgium, drastically reducing the size of its military (to no longer be a threat), agreeing to abide by the principles of territorial self-determination, a liberal world order, and the replacement of the monarchy by a

democratic form of government. Germany was a depleted and broken country that had been pushed to the limits of its resolve.

Conclusion

In this paper, I have argued that states add new highly salient indivisible issues to signal its high resolve to its opponent. I suggest that three necessary conditions must be present before a state has incentives to use highly salient indivisible issues as a signal of resolve. 1) The state is highly resolved, but its opponents doubt its resolve. 2) The availability of highly salient indivisible issues to attach to the issues already under dispute 3) The state is currently restrained from signaling its resolve on the battlefield but desires to signal that it will be able to use its latent military capabilities to bring the war to an end in the future successfully. However, when these necessary conditions are not present states will not use highly salient indivisible issues as a signal of resolve. To assess the plausibility of my argument, I explore the experience of Britain during World War I. In line with my theory. I find that at moments when the three specified necessary conditions were present that Britain added new highly salient indivisible issues. On the other hand, when the three necessary conditions were not present the incentives to add highly salient indivisible issues were not present, leading to issue stability.

This paper represents a piece of a broader research agenda. As I mention above, although I perform an in-depth plausibility probe on Britain's wartime behavior this is not a test of my theory. However, it does suggest that further cross-sectional tests are warranted. To thoroughly test my theory, I need to gather fine-grained data across all belligerents and all wars to adequately assess the size and direction that the specified necessary conditions have on the likelihood of adding new highly salient indivisible issues. Future work will also explore the

effects that regime type and fluctuations in various types of military capabilities have on a state's willingness to signal through highly salient indivisible issues.

CHAPTER 4

TARGETS, CHALLENGERS, TERRITORIAL DISPUTE, AND ISSUE INDIVISIBILITY²¹

²¹ Atkinson, Douglas. To be submitted to Journal of Conflict Resolution, May 15, 1018.

Abstract

I explore how the role of issue salience and divisibility effect the duration of territorial conflicts. Scholars doing research along these lines have gone further, to account for the wide variation within territorial disputes and the likelihood that they will end in conflict, suggesting that issues vary along two dimensions, salience, and tangibility, and that this variation in salience and tangibility can help to explain variation that exists between various territorial disputes and the subsequent likelihood that the competition over the territory will lead to the outbreak of militarized conflict (Huth 1996, Hensel and Mitchell 2005, Hensel et al. 2008). While these scholars have produced valuable insights, they have not fully explored the role of issue indivisibility on territorial dispute duration. More specifically, they have not explored the role of variation in whether the target or the challenger possesses or desires to possess the indivisible intangible issue. I argue and find evidence that whether the target or the challenger desire to possess the issues will have a dramatic effect on the duration and intensity of territorial disputes. More specifically, I offer an explanation for dispute duration and the subsequent strategies states use to resolve these disputes.

Introduction

From 1921 to 1945, a period of 8,644 days, China and Japan found themselves in a long running dispute over possession of the Liaotung Peninsula. Contrast this relatively long-lasting dispute to the dispute between China and Russia over the same piece of territory, in 1898, which lasted only one day. In both of these cases, China desired to possess the territory for far more than just its tangible values. Specifically, China valued the Liaotung Peninsula because it considered it to be part of its homeland as well as the fact that the territory possessed symbolic ethnic value. The comparison between the two examples outlined above raise a very important and perplexing question: What explains the dramatic differences in the duration of the two disputes? I argue that

the answer to this question lies in the roles that China played in the two disputes. In the dispute with Russia, China played the role of the target while in the dispute with Japan it played the role of challenger.

More generally, I argue that whether the target, the challenger, or both states desire to possess the intangible values attached to a piece of territory will affect the duration of territorial disputes. Specifically, I build upon previous scholars that have argued intangible²²Values are often seen as indivisible²³by those that desire them. Indivisible issues represent a problem for states desiring to bring a territorial dispute to an end in that when they are present no bargaining range exists. Fearon (1995), however, suggests argues that while indivisible issues theoretically represent one of three bargaining problems that inhibit a peaceful settlement, in practice indivisible issues are not all that problematic as side payments are usually available. Extending upon Fearon's logic, I suggest states can find agreements surrounding indivisible issues by offering side payments that allow for the creation of a bargaining space. However, as the salience of the indivisible values increase the more unlikely it will be for a state to be willing or able to offer a concessionary issue. This will force these states to continue the dispute until one side reaches the limits or its resolve, or the costs the state is willing to pay for the territory. Specifically, I suggest that the strategies used by states seeking to take possession of highly salient intangible issues from the state that currently possesses it (challengers) are different than those states seeking to maintain it (targets).²⁴

²² Intangible issues are issues that cannot be photographed while tangible issues can (Rosenau 1971).

²³ I define an indivisible issue as being an issue that cannot be divided without the issue losing its value to those that desire to possess it (Toft 2004).

²⁴ While previous scholars have previously explored the differing incentives for targets and challengers involved in territorial disputes (Huth and Allee 2002, Carter 2010, Bell 2017), these studies have not explored the role of intangible value, instead focusing on the how various power dynamics affect the bargaining range. Additionally, these studies have not explored how differing incentives for targets and challengers affect the duration of territorial disputes.

The differences in strategies will subsequently lead to wide variations in the durations of the disputes

A number of scholars have explored the effect that intangible values will have on the bargaining process. These scholars have extensively explored the role that the presence of intangible values will have on the outbreak of war (Toft 2003, Hensel and Mitchell 2005) as well as the role indivisible values play in long lasting territorial disputes (Goddard 2010, Wiegand 2011). While these scholars have added considerably to our understanding of territorial conflict, these scholars have not broken apart the logic of indivisible issues and the effect that this logic will have on the strategies employed by challengers and targets to retain, or obtain, possession of the territory and the subsequent effect this will have on the duration of the dispute. In this paper, I fill this gap in the literature as well as providing the first quantitative exploration of intangible salience and dispute duration.

Using duration analysis on a dataset consisting of all territorial disputes from 1816 to 2001, I find that the varying incentives for the challenger and the target will have differing effects on both the strategies states employ to resolve their disputes and subsequently the duration of these disputes. Specifically, when the challenger desires possession of highly salient intangible values attached to a piece of territory, it will have incentives to use a strategy of attrition leading to relatively long-lasting disputes. When the territory does not possess high levels of intangible salience for either the challenger or the target, states will be hesitant to use military force leading to peaceful but exceptionally long-lasting territorial disputes. On the other hand, when the target desires to maintain possession of intangible values, but the challenger does not, the challenger will have incentives to use military force in order to obtain a side payment or a decisive victory. These incentives will lead to violent disputes and unusually short territorial conflicts. Finally, when both

the target and the challenger desire a piece of territory for highly salient intangible values attached to it, territorial disputes will be especially violent but relatively short.

In this paper, I will first review the literature that has explored that intangible value plays in territorial disputes. I will then outline my theory, from which I will propose a number of testable hypotheses regarding dispute duration. I will then test my hypotheses from which I derive a number of conclusions as well as propose a number of avenues for future research.

Territory and Intangible Value

There is a large body of literature exploring the territorial dispute process. Scholars within this research agenda have established that disputes over territory are more likely to lead to militarized conflict and war than disputes over any other issue type (Vasquez 1993, Hensel 1996, Vasquez and Henehan 2001, Tir and Vasquez 2010). However, simply knowing that territorial disputes are more likely to lead to militarized conflict says very little about when and why territorial disputes will lead to conflict or the duration of the dispute. Which are pressing questions, given that the military intensity and duration of territorial disputes varies widely. Scholars have come to argue that this variation is a result of the territory's attributes (Huth 1996, Hensel 2001)

Territories are valued for more than just their strategic or economic resources. As scholars have repeatedly contended, a piece of territory can be desired for a number of different reasons (Huth 1996, 1998, Huth and Allee 2002, Hensel 1996, 2001). Specifically, a piece of territory can be valued for its tangible or intangible values, but few issues are desired for only one of these types of values (Hensel et al. 2008). Scholars have long suggested that highly salient²⁵Intangible values such as ethnicity, religious importance, national identity, and ideology are often attached to pieces of territory, or other issues with high tangible salience (Mansbach and Vasquez 1981, Vasquez

²⁵ The salience of the issue is determined by the extent to which the domestic population of the state and its leaders care about the issue (Diehl 1992).

1983, Diehl 1992, Hensel 2001). This has the effect of making possession of the territory more important to the relevant decision makers and domestic populations as well as making it more difficult to resolve the disputes arising due to competing claims to the territory.

Scholars have come to argue that this increased difficulty stems from the fact intangible values are often viewed as indivisible²⁶ (Hensel 2012, Toft 2014), one of the three causes of war identified by Fearon (1995). When indivisible issues are present, bargaining becomes more difficult as the bargaining range disappears. Previous work that has explored the role of intangible issues and their effect on territorial disputes has explored how the presence of highly salient intangible issues creates bargaining difficulties. Scholars have explored the bargaining difficulties that the intangible values attached to pieces of territory creates. These scholars have found that when indivisible intangible values are under dispute that war becomes more likely and border settlement becomes more difficult (Toft 2003). Further, the difficulties posed by intangible values increase, making war and militarized conflict more likely, as the salience of these values increase (Hensel and Mitchell 2005).

Scholars have extended this argument suggesting that because of the bargaining difficulties posed by indivisible intangible issues, leaders can use these issues to strategic effect. By adding highly salient intangible issues to those under dispute, a leader can tie their hands in the hopes that it will lead to a bargaining advantage and a more successful outcome. This strategy leads to long-lasting disputes because the additional highly salient intangible issues make it more difficult for

²⁶ An issue is indivisible if it cannot be divided without the divided object losing the value that it possessed. As previous scholars have pointed out, issues are rarely physically indivisible but are more commonly the product of socially constructed values shared by a large proportion of a state's domestic population and as such would lose its value if divided (Toft 2006, Goddard 2010). It should be noted, that scholars have increasingly come to argue, counter to previous suggestions, that whether or not issues are indivisible or because they physically cannot be divided without the issue losing its value, or it is viewed by those that possess the issue as indivisible, the effect that the indivisible issue has on the bargaining dynamic is the same.

the actors to resolve their conflict leading to longer and more conflict-prone territorial disputes because the states cannot find an appropriate distribution of the issues (Goddard 2006, 2010). Additionally, scholars have suggested that states that are disputing over the possession of territory, will use the intangible aspects of the territory to obtain a bargaining advantage on unrelated issues (Weigand 2011).

While these arguments provide valuable insights into the territorial dispute process, they do not fully account for the effect that the intangible values attached to the territory will have on the strategies states employ to resolve their disputes and the effect this will have on dispute duration. Ultimately, whether or not the disputed territory possesses intangible values that are sought by the target, the challenger, or both disputants will have important effects on the strategic incentives for the competitors. This will lead to wide and unexplored variation in the duration of the territorial dispute the level of military violence associated with the competition over the territory.

Targets, Initiators, Divisibility, and Territorial Dispute Duration

I begin my theoretical argument with the assumption that states disputing over a piece of territory are rational. As rational actors, they desire to obtain as much of the territory as they while paying the fewest costs possible. Since territorial disputes are costly and these costs increase the longer the dispute lasts, states involved in territorial disputes will desire to keep disputes as short as possible to save the costs of a protracted, drawn-out conflict. To keep their disputes short states desire to come to an agreed distribution of the territory that is based upon the two side's relative probabilities of successfully capturing the disputed territory. The states relative probabilities of successfully obtaining the territory is a function of the two sides' relative capabilities (the resources it can employ towards obtaining their objectives, both military and financial) and resolve (the costs

the states are willing to employ toward achieving its objectives). Beyond the abilities of the states to ascertain their relative resolve and capabilities, however, the ability of the states to come to a dispute ending agreement also depends upon the divisibility of the values attached to the territory.

When indivisible issues are attached to a territory, the two sides will find it difficult to reach a negotiated agreement. This difficulty stems from the fact that competitions over indivisible values are winner-take-all and can therefore only be resolved when one concedes possession of all of the indivisible values or reaches the limits of its resolve. Because a concession of the indivisible values attached to the issue would leave one side empty-handed, a state will not make a concession of the indivisible values until it that state has reached the limits of its resolve. To further demonstrate this logic, consider the following: state A state will always have a higher expected utility, $E(u)$, for continuing to dispute the territory than conceding the territory: since $E(u) = (\text{probability of success} \times \text{value of issue}) - \text{costs}$, it will always be higher than the utility of a concession, $u = 0 - \text{costs}$, until the costs of the dispute exceed the state's resolve. Thus, contests over territory that have indivisible issues attached to it will be fought until one side reaches the limits of its resolve.

Even when states are in the scenario described above, states will desire to end their disputes as quickly as possible to minimize the high costs of continuing the dispute to the limits of one side's resolve. To do this, one side must introduce a bargaining space. A bargaining space can be introduced through the inclusion of a side payment that is equal to the state's expected utility at the point the concession is introduced. However, as the value of the indivisible issues increases, the less willing or able to make a compensatory side-payment a state will be. Either the opponent's resolve is so high that a compensatory side issue does not exist, or the costs of the side payment exceed the costs the state is willing to pay. This suggests that as the values of the indivisible issues

increase, introducing a bargaining range and coming to a negotiated settlement will be more and more difficult. However, as the costs increase, the value of the requisite side-payment will also decrease, suggesting that the longer the dispute goes on, the easier it will be for a disputant to offer a conflict-ending side payment. The strategic incentives presented by the logic of indivisible issues, however, change depending upon the whether the state is acting as the challenger or target in the dispute.

As the labels imply, challengers desire to take possession of the disputed territory while targets desire to maintain possession of the territory. For the challenger, any distribution of the territory will be a net gain while any division of the territory will be a net loss for the target. Additionally, note that while the tangible values attached to a piece of territory are likely to be valued by both sides of a dispute, intangible values (such as ethnic ties and the territory being considered a part of the country's homeland) are not. In other words, while one state in a dispute may be attempting to acquire or maintain possession of highly salient, indivisible, and intangible values, the state's opponent is often not competing over these same values.²⁷

When a piece of disputed territory is desired by the target and the challenger for only its tangible values (the functionality of the land: e.g., natural resources or territory), states will have incentives and the ability to divide the territory. The target, wanting to save the costs of a long drawn out dispute and avoid costly militarized conflict, will desire to distribute the territory according to what the two sides' relative probabilities of successfully winning the conflict. Although the target is losing value in a negotiated settlement, its net loss will be lower the lower the costs of continuing the dispute or militarized conflict. Similarly, the target will have incentives

²⁷ This is an observation that has been acknowledged by a number of previous scholars, even being coded into the Issue Correlates of War dataset (Frederick et al. 2017). In spite of this recognition, there have been no serious attempts to explore the effect that the unshared intangible values affect the process by which the states compete over territory.

to end the dispute quickly through a negotiated settlement. As it can obtain its desired value from the territory, while saving the costs of extending the dispute or engaging in costly military conflict. This suggests that the shorter the dispute, the higher the net gain for the challenger and the lower the net loss for the target. However, the two sides cannot come to a negotiated settlement until they have come to a convergence regarding their relative capabilities and resolve the dispute will be especially long. Since both sides are willing to accept an agreement the states will desire to avoid the militarized use of force which could escalate into a war which would further cut into the challenger's net gain and increase the target's net loss. Because the disputants want to avoid military conflict, it will take longer for the states to signal their resolve as the most effective costly signal, military force, will be avoided.²⁸ This logic leads to the following hypothesis:

Hypothesis 1: When the intangible salience for both the challenger and the target are low, disputes will be relatively long.

When a challenger desires to obtain possession of intangible issues, but the target is not, there is no division of the territory that the challenger can accept. The target would be willing to accept a division of the territory, but due to the challenger's maximalist demands, the competition becomes winner-take-all for the target as well. To keep the dispute as short as possible, the target will attempt to introduce a bargaining range through the inclusion of a compensatory side-payment. However, as the value of the indivisible intangible values that the challenger desires increase, the more difficult it will be for the target to find or afford, the necessary side payment. Since the challenger is demanding all of the disputed territories, it will also be unlikely to be able to make a dispute ending side payment to the challenger.

²⁸ For analysis regarding the various strategies employed in each dispute type see Appendix L.

Since the target will be increasingly unable to offer a compensatory side-payment as the intangible values desired by the challenger increase, the challenger, anticipating that it has higher resolve than its opponent, will employ strategies that will allow it to capture the entirety of the territory by wearing down the resolve of the opponent. In this case, the challenger will employ a strategy of attrition, which is used to ratchet up the costs of conflict over an extended period.²⁹ A strategy of attrition will either push the target to the limits of its resolve, at which point the target will drop its claim to the territory, or it will drive up the costs of the dispute to the point that the challenger will be able to find or afford a conflict-ending side-payment. This conflict ending side payment will be the difference between the costs and resolve and any point in the dispute. As the dispute goes on, accepting a conflict-ending side-payment will be increasingly appealing to the target. If the target were to reach the limits of its resolve with the dispute ongoing, it would not maintain any of the value attached to the issue, as at this point the costs of the dispute have exceeded the value of the territory.

A strategy of attrition is an ideal strategy for the challenger as it] allows the challenger to ramp up the costs of the dispute while minimizing the risk that the conflict leads to high-intensity military conflict or war. The desire to avoid war stems from the fact that war is a very costly lottery, wherein there is always a probability, regardless of its relative strength, that the challenger will lose the war and will not capture the value while expending the limits of its resolve. A strategy of attrition is less risky. Although a state desires to limit the risk of war, it still needs to ratchet up the costs of the target for maintaining the status quo. The challenger will do this through low-intensity military conflict. The employment of low-intensity military force requires the target to

²⁹ I define an attrition strategy within a territorial dispute as being a strategy intended to ratchet up the costs of the dispute to the point that one side chooses to give in to the demands of the other. This is the same logic as the strategy of attrition as it applies to war as developed by multiple authors, most notably Langlois and Langlois (2009), except the manner that states ratchet up the costs is not on the battlefield and not necessarily through military means.

invest in military force to maintain the territorial status quo. It should be noted that neither the peace attempts nor the militarized conflicts are necessarily intended to end the dispute in the present but are intended to ramp up the costs of the dispute ending the conflict at some future point, when either the target reaches the limits of its resolve and concedes the territory or the challenger can afford the requisite side-payment and bring the dispute to an end. This leads to the suggestion that when the challenger desires to possess intangible values but the target does not, disputes will be longer, and the challenger will ratchet up the costs of conflict through the continued employment of low-intensity military force and attempts at peaceful dispute resolution. This logic leads to the following hypothesis:

Hypothesis 2: When the challenger desires to possess intangible salience, but the target does not, territorial disputes will be relatively longer.

I anticipate that when both the challenger and the target desire to possess highly salient intangible issues attached to disputed territory, the incentives for the challenger remain the same, however, I assume that the target will be more resolved than in the scenario described above. Since side payments will be costly, the dispute will not end until one side reaches the limits of its resolve or the costs are high enough that the challenger or target can afford a concessionary side-payment. However, unlike the scenario described above, the challenger will anticipate that both it and the target are highly resolved and will thus avoid drawing the dispute out as it will be unsure if it can win the dispute if it attempts to outlast the opponent. Because no division of the issue is possible and a concessionary side payment will be very difficult to find, even after a prolonged dispute, the challenger will seek to obtain the territory utilizing intense military conflict and war, in the hopes of achieving a victory of conquest. Since war is akin to a lottery, with each side having some probability of winning, the challenger will take the risk that it can defeat the target in war, rather

than prolong the dispute as this may be more costly and lead to an uncertain outcome. The logic outlined above leads to the assertion that when both the challenger and the target desire to possess highly salient intangible issues, states will be more likely to employ high-intensity military force. This logic leads to the following hypothesis:

Hypothesis 3: When both the target and the challenger desire to possess highly salient intangible values, territorial disputes will be relatively shorter

When the challenger desires a piece of territory only for its tangible salience, but the target does not, there is a division of the territory that the challenger would be willing to accept. However, since the target desires to maintain possession of the intangible values attached to the territory under dispute, and these intangible values are indivisible, there is not a division of the territory that the target can accept. Since the challenger can anticipate that the target will be unwilling to accept a war ending division of the territory and it is highly resolved, it must either capture the entirety of territory through military conquest or force a concession. Since the territory is divisible for the challenger, it will be indifferent between a settlement that grants it the appropriate distribution of the territory under dispute or a side payment that is of equivalent value to this distribution.

In this case, the territorial dispute will end when either the states' relative capabilities and resolve can be ascertained, or the challenger achieves a decisive victory of conquest. Ultimately, the challenger desires the entirety of the disputed claim, however, to save the costs of fighting to the limits of its resolve the state will accept a negotiated settlement that provides it value equivalent to the distribution it would have received based upon the probable outcome, which is a function of its relative capabilities and resolve. Since states in such cases have an incentive to overstate their relative capabilities and resolve to obtain or retain as much value as possible. This dynamic creates

an information problem that can only be resolved when one side can send a costly signal of its resolve and capabilities. Both of these tasks are best accomplished through intense military force, as only a resolved state would use high-intensity military force.

Once the states have exchanged credible signals and can ascertain their relative capabilities, they will know the appropriate distribution of the issues and can bring the dispute to an end. Since the challenger is unwilling to divide the territory, at this point, it will offer a side payment of an equivalent value to the distribution of the territory the challenger would have received had the territory been divisible. Although the challenger prefers a quick victory of conquest, either a concessionary side payment or victory of conquest are achieved through the employment of high-intensity military force. This logic leads to the following hypothesis:

Hypothesis 4: When the target desires to possess intangibly salient values but the challenger does not, disputes will be relatively short.

Research Design

I will be running large-N statistical analyses on the universe of territorial claims made by two countries between 1816 and 2001. The data I will be using is cross-sectional and comprises all cases where a territorial claim was identified by the Issue Correlates of War (ICOW) project (Frederick, Hensel and Macaulay 2017). The Issue Correlates of War identifies a territorial claim as being present when three conditions are met: 1) two states make competing for claims to sovereignty over a piece of territory, 2) the claims are explicit, 3) and a government official makes the claims. If all three of these conditions are met, then it is coded as a territorial claim. This coding scheme has led to the identification 832 observations of dyadic territorial claims. Since the hypotheses I specify consider the effect of intangible salience possessed by challengers and targets on the duration of territorial disputes I will employ both event history models, intended to assess

the impact of variables on the duration until an event occurs, and a series negative binomial regression models, to evaluate the effect of the variables of interest on the count of wars and MIDs.

To assess the effect that the various levels of intangible salience possessed by challengers and targets have on the time that elapses from when the dispute started until it ends, I take the number days between these two dates. This count ranges from 0 to 54,907 days with 710 disputes ending and 107 ongoing disputes with failure being coded as the point the dispute ends.

My main independent variables are the intangible salience of the challenger and the target. To operationalize this variable, I use data taken from Frederick, Hensel, and MaCaulay (2017). The intangible salience of the target is measured on a scale from 0 to 3. With a state receiving a 1 for any of three following indicators: 1) the territory is claimed by the target as homeland territory, 2) the territory has a religious, ethnic, or linguistic connection to the territory, and 3) the territory has been administered by the target at some point during the past two centuries. The intangible salience of the challenger is measured in the same manner.

I also employ a number of control variables which have been shown by previous studies to have a statistically significant effect on my various dependent variables of interest (Hensel et al. 2008). I first control for the tangible salience shared between the states making up the dyad. To do so, I use the measure devised by Frederick, Hensel, and MaCaulay (2017). The tangible salience is measured dyadically from 0 to 6, with a dyad receiving 2 points if the territory possesses any of the following attributes: 1) it possesses, or is believed to possess, valuable resources. 2) The territory is considered to be strategically valuable for either economic or military reasons. 3) The territory supports a permanent population.

I also control for challengers share of dyadic power. To operationalize this variable, I take the challenger's share of the dyads combined capabilities using the following formula:

$\frac{\text{Challenger's Capabilities}}{\text{Challenger's Capabilities} + \text{Target's Capabilities}}$. The data I use to operationalize this variable comes from the Composite Index of National Capabilities (CINC) (Singer 1987). The CINC is an index that provides a yearly score of a state's capabilities to fight a war that accounts for both its exogenous and endogenous sources of power. Specifically, it accounts for a state's total population, urban population, iron and steel production, energy consumption, military personnel, and military expenditure. To account for the fact that many territorial disputes last for many years, I take the average of a state's capabilities divided by the duration of the dispute.

I also control for the regime type of the states making up the dyad, as this has been shown by a number of studies to have a statistically significant effect on the likelihood of states disputing over a piece of territory going to war. To operationalize this variable, I use data taken from the Polity 2 measure which comes from the Polity IV dataset (Marshall, Gurr, and Jaggers 2017). Polity IV assigns each country a yearly regime score ranging from -10 to 10. As was the case with CINC, I find the average polity score for each of the two states during the duration of the dispute. Since previous research has shown that dyads, where both states are democracies, are less likely to have territorial disputes in the first place and more likely to settle their disputes peacefully than mixed regime states (Gibler 2007, Owsiak 2012, Gibler and Owsiak 2017, Wright and Diehl 2014), I create a variable signifying whether or not both states in the dyad are democracies. If the average polity score for a state is ≥ 6 , then I assign that observation a 1. I perform this process for both the challenger and the target. I assign a 1 to cases where both states in the dyad are democracies with all other cases being coded as a zero.

Additionally, I control for fatal MID's and wars. The data for these variables are taken from ICOW and are dichotomous, with cases where a war occurred during the dispute receiving a 1 and all other cases being coded as a zero. Finally, I control for whether or not the dispute was resolved

for or after the end of World War II. The thinking behind this control variable is that after World War II, countries have been more hesitant to settle their disputes by means of military conflict relative than pre-World War II, due to the evolution of the territorial integrity norm during the post-war years (Zacher 2001).

Table 3: Summary Statistics of Independent Variables

Independent Variables	Obs	Mean	Standard Deviation	Min	Max
Intangible Saliency (Target)	827	2.024	0.848	0	3
Intangible Saliency (Challenger)	827	1.569	0.992	0	3
Tangible Saliency (Dyad)	827	3.899	1.568	0	6
Ave. Relative Cap (Dyad)	827	0.469	0.471	.000	.999
Joint Democracy	827	0.109	0.497	0.00	1.00
Post-World War II	827	0.444	0.497	0	1
Days (ln)	826	7.515	1.874	0	11.125
War	827	0.155	0.363	0	1

Analysis

To assess the effect that the challenger and target's intangible saliency have for the duration of a territorial dispute, I use a series of Cox proportional hazard models using the Breslow method for ties. Duration models are used to assess the time until failure depending upon the values of the specified covariates. The advantage of using a Cox model relative to other types of duration models is that I do not have to specify a baseline hazard. Since I do not have a strong theoretical reason to specify a hazard, this attribute of the Cox model is advantageous. However, the use of the Cox model assumes proportional hazards. After running post-estimation diagnostics to assess if my models violate the proportional hazards assumption, I find that my models do not violate this assumption.³⁰ In Table 2, I present the results of my analysis. It should be noted that for ease of interpretation, I present my findings in hazard ratios. The interpretation of hazard ratios is

³⁰ The results of these tests can be found in Appendix M.

somewhat counterintuitive. Unlike coefficients generated by duration models, there are no negative values to signify shorter lengths of time to failure. Hazard ratios below one signify that a one unit increase in the variable of interest leads to a reduction in the risk of failure. On the other hand, values higher than one signify that a one-unit increase in the variable of interest will lead to a corresponding increase in the risk of failure.

Table 4: Survival Analyses on Territorial Dispute Duration, (Robust Errors)

	(1)	(2) (Interaction)
Intangible Saliency (Challenger)	0.893*** (0.038)	
0		1.628*** (0.261)
2		1.213 (0.214)
3		1.992*** (0.396)
Intangible Saliency (Target)	1.274*** (0.068)	
0		0.793 (0.303)
2		1.155 (0.204)
3		3.344*** (0.710)
Int Sal Target x In Sal Chal		
0 0		empty
0 2		0.987 (0.153)
0 3		0.569** (0.153)
2 0		0.515 (0.286)
2 2		0.503*** (0.132)
2 3		0.468*** (0.128)
3 0		empty
3 2		0.813 (0.255)
3 3		0.298*** (0.083)
Tangible Saliency (Dyad)	1.030 (0.024)	0.975 (0.024)
Relative Capabilities (average)	1.167 (0.139)	1.099 (0.135)
Joint Democracy (average)	1.577*** (0.170)	1.512 (0.169)
War	1.020*** (0.109)	1.219 (0.165)
Post World War II	0.449*** (0.036)	0.471*** (0.039)
Observations	826	826
Number of Failures	719	719
Log-likelihood	-4118.645	-4077.652
Results are presented in Hazard Ratios		

In model 1, I analyze the effect that the intangible salience of the challenger and the target has on territorial dispute duration. Since the model provides hazard ratios while holding all other covariates at their mean, I can assess the behavior the disputants when facing an average opponent. Specifically, this means that for the challenger they are disputing with a target that assigns an intangible salience of 2.03 to the territory. The target is facing a challenger with an intangible salience of 1.57. I find that for every 1-unit increase of the Challenger's intangible salience there is a corresponding 12.6 percent decrease in the hazards. The size of this effect from the minimum value of intangible salience to the maximum would be a 50.4 percent decrease. As I anticipated in my theory, this effect is quite large and suggests that the higher the intangible salience of the challenger the longer a territorial dispute will last. I also find the opposite effect for the intangible salience of the target. Specifically, as the intangible salience for the target increases, the shorter the duration of the territorial dispute. I find that for each 1-unit increase in the intangible salience of the target there is a corresponding increase of 20.9 percent in the hazards. From the minimum value of the target's intangible salience to the maximum this suggests that there is 83.6 percent increase in the hazards or an 83.6 percent higher chance that the dispute ends in any given point than the baseline hazard. This suggests as I anticipated in hypothesis 1a, that as the intangible salience of the target increases the shorter the duration of the territorial dispute. In spite of the encouraging results from model 1, to truly test my hypotheses, I need to interact the intangible salience of the challenger and the target to get at the effect that a state's desire to possess or maintain possession of intangible values will have, conditioned on the intangible salience of the state's opponent. In order to assess the conditional effects I hypothesize, I introduce an interaction between the intangible salience of challenger and the target in model 2.

In model 2 table 2, I present the results of my analysis which includes the interaction between the challenger and target's intangible salience. Because the variables for the intangible salience of the challenger and the target are ordered, the model generates an estimate of the hazard ratio for each level of intangible salience for the target and initiator as well as an estimate for each level of intangible salience for the interactive effect. Since these estimates are based upon the interaction of the two variables, with the reference category being set at one for both the target and the challenger, the size, and even the direction (whether the dispute is longer or shorter), are difficult to ascertain from the hazard ratios presented in the table. Because the direct interpretation of the results is so unwieldy, I present the predicted survival curves for theoretical points of interest.

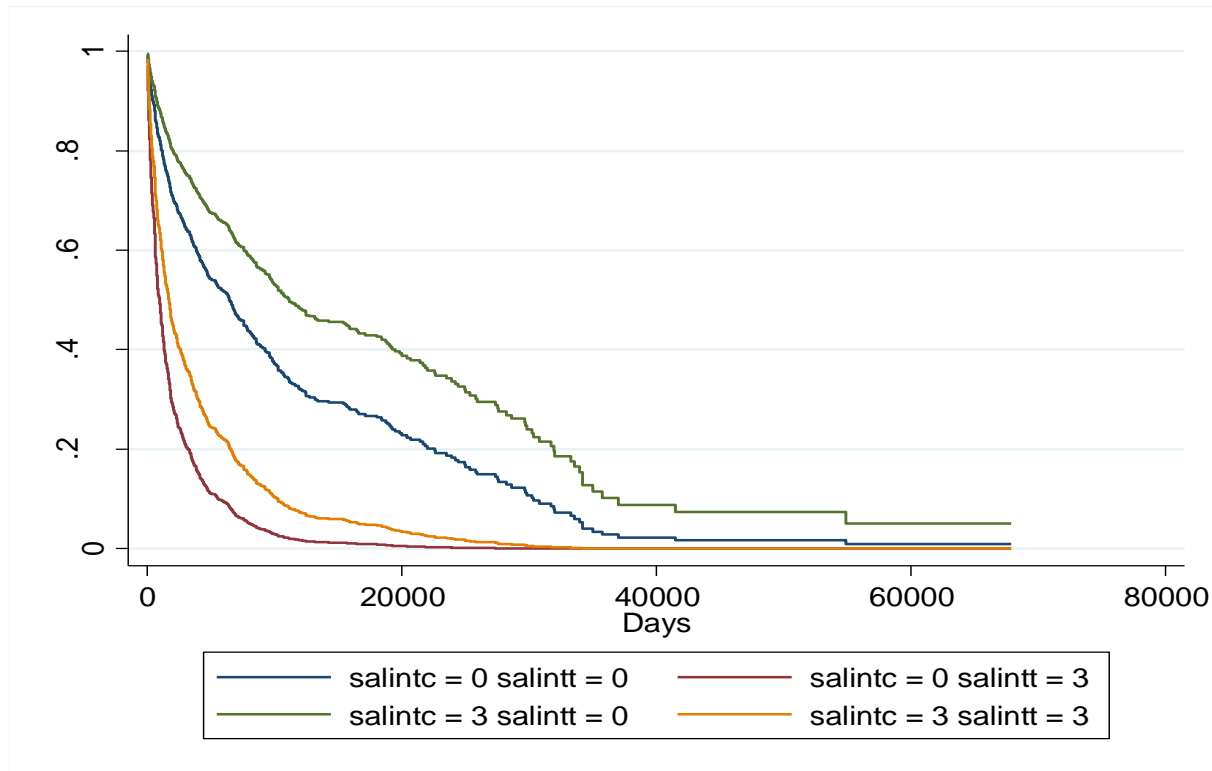


Figure 6: Survival Curves for Challenger and Target Intangible Saliency Interaction

In Figure 6 (above), I provide the survival curves for theoretical points of interest. The green line represents the predicted survival of cases where the intangible saliency for the challenger is high, and the intangible saliency of the target is low. As can be seen, and as anticipated by my theory, these are the cases that are most likely to last the longest. Specifically, at around 10,000 days the dispute has around a 60 percent chance of continuing. At 20,000 days the probability of survival has only dropped to 40 percent. The probability of cases such as these continuing does not approach zero until around 40,000 days. I argue that these cases are longest because the challenger in these cases has the strongest incentives to engage in a strategy of attrition. A strategy of attrition stropponent continuing the dispute.

The blue line represents cases where neither the challenger nor the target is seeking to capture or maintain possession of intangible values. As can be seen from the line, the duration of these disputes is relatively shorter than cases represented by the green line but longer than the other two cases. At 15,000 days, disputes have around of 40 percent chance of continuing and around a 20 percent chance of continuing at 25,000 days. The predicted survival curve for these cases does not approach zero until the dispute has lasted around 35,000 days. I anticipate that these cases are likely to be long since the territory under dispute is divisible and possesses low salience. Since the territory is divisible states will seek to end the dispute through a negotiated settlement that divides the territory according to the relative capabilities and resolve of the disputants. Since the salience of the issues is low, the disputant states will be less willing to use military force as it may lead to a costly military conflict. Because the target and the challenger are hesitant to use military force as costly signal and bring the dispute to an end, the ability of the states to come to a convergence regarding their relative capabilities and resolve will be more difficult. This difficulty will lead to relatively long disputes.

The predicted survival curves of the other two theoretically relevant types drop much faster, and in line with my theory. The orange line represents cases where both the challenger and the target desire possession of highly salient intangible values. The cases are likely to end more quickly than the previous two cases but will last longer than instances where the challenger does not desire intangible values, but the challenger does. In cases represented by the orange line, the dispute has around a 20 percent chance of continuing after 8,000 days and approaches zero at around 20,000 days. Ultimately, the duration of these disputes is much shorter than cases where the challenger has incentives to engage in a strategy of attrition. Since states have incentives to use military force with a relatively high intensity

The purple line, representing cases where the target desires highly salient intangible values but the challenger does not, will end the quickest. Relative to other cases, these cases are very short and have an approximately 20 percent chance of lasting longer than 1,000 days and approach zero percent chance of continuing at just over 10,000 days. As mentioned in my theory, I anticipate that these cases will end so quickly due to the fact that the disputants being unable to anticipate that they have higher resolve than their opponent, will instead choose to employ military force at a high intensity, anticipating that the costly lottery represented military conflict provides the least costly and best chance of the disputants capturing or maintaining possession of the highly salient intangible values.

The findings from my analysis provide strong evidence in support of my theory. Specifically, I find that whether the target, challenger or both disputants in a territorial dispute desire intangible values attached to the territory has a dramatic effect on the strategies challengers and targets use to resolve their disputes and the subsequent duration of the dispute. Specifically, I have found that as I anticipate, the challenger will choose to engage in a strategy of attrition, which will lead to especially long-lasting territorial disputes, when it anticipates and has incentives to outlast its opponent. When the challenger has incentives to employ a strategy of attrition territorial disputes will drag on for years, whereas when the challenger has incentives to reach a settlement quickly through the intense employment of military force, either to force a concession from a highly resolved target or to capture the entirety of the territory, territorial disputes will be short. While the results are promising, further analysis will be needed to untangle the dispute process more fully.

Conclusion

In this paper, I have explored how differences between the intangible salience of the challenger and the target affect the strategies used to bring territorial disputes to an end and the subsequent duration of the dispute. Specifically, I have shown that as the salience of the intangible values desired by the challenger increase the longer a territorial dispute will last. I suggest and find stronger evidence that this is a result of the target's inability to compensate the challenger for the value of the indivisible intangible values and the incentives stemming from this inability for the challenger to engage in a strategy of attrition. On the other hand, as the salience of the intangible values that the target desires to maintain increase, I find that territorial disputes will be shorter. I find that the shortness in the duration of these territorial disputes is a result of the incentives presented to the challenger to use high-intensity military force to either achieve a military victory or force a concession from the challenger.

The findings in this paper open up exciting opportunities for future research. Specifically, future research should explore how the intangible salience of the issues varies not only between the challenger and the target but varies across time. There is reason to anticipate that the salience varies across time and that this will give scholar a better means of assessing when militarized conflicts and peace settlements will occur.

CHAPTER 5

Conclusion

In this dissertation, I have developed a theory for the role that indivisible issues play in international conflict. Specifically, I have argued that the costs of conflicts are high. These high costs provide states with an incentive to end their conflicts as soon as they can. States will be able to end their conflicts when they come to some convergence regarding their probability of winning the conflict. The state's probability of winning a conflict is a function of a state's relative resolve and capabilities (Slantchev 2003). However, when states are disputing over indivisible issues no bargaining range, or acceptable divisions of the issue, exist. This makes competitions over indivisible issues winner-take-all. Because indivisible issues are winner-take-all, states will have an incentive to either fight over the issue until one side pushes the other to the limits of its resolve. This incentive stems from the fact that the expected utility of continuing the dispute, $E(u) = (\text{probability of victory} \times \text{value of issue}) - \text{costs}$, will always be higher than the known utility of making concession, $u = 0 - \text{costs}$, until the costs of the dispute exceed the value of the issue (which is equivalent to the limits of a state's resolve). Because of this, a dispute over indivisible issues will not end until the limits of a state's resolve are reached. Because states desire to save the costs of fighting a long and costly conflict, they will desire to introduce a bargaining range through a compensatory side payment equal to the value of the issue minus the costs paid up to the present point in time. The more valuable the indivisible issue, however, the more difficult it will be for a state to be able or willing to offer the appropriate side payment needed to introduce a bargaining range, subsequently, bring the dispute to a close.

When the introduction of a compensatory side-payment is not available or is prohibitively costly, states will choose alternative means of bringing their disputes to an end. Depending upon its resolve relative to its opponent, states disputing over indivisible issues will have increased incentives to engage in a strategy of attrition. Specifically, states will choose a strategy of attrition in situation wherein it anticipates that it is more highly resolved than its opponent. This is because an attrition strategy allows a state to ratchet up the costs of the conflict over an extended period. Since states will anticipate that they can outlast their opponent in this scenario, they will be more willing to see the conflict through to an end. Additionally, because an attrition strategy is costly, a state will only choose to employ this strategy if it anticipates that it can outlast its opponent and if no division of the issue is possible.

The strategic incentives for choosing to employ a strategy of attrition do not only vary across the different values of the disputed indivisible issue but also vary according to whether or not the state desires to obtain or retain the issue (whether or not the state is in the role of a challenger or a target). I have argued and found evidence that the extension of this theory can help to explain various international dispute contexts. Specifically, I have found that my theory regarding issue indivisibility can help to explain the variation in the duration of both territorial disputes and interstate wars. Further, I find that the incentives for a state to engage or refrain from employing a strategy of attrition vary depending upon the value of the indivisible issues under dispute.

In the future, I will take a closer look at the manner by which states dispute over indivisible issues, specifically looking at the process by which states engage in a strategy of attrition. This is an important step towards further validating my theory as a state's strategy selection is a crucial part of the causal story I offer for dispute duration. Further, by performing a more in-depth

examination of this process, the results will offer policymakers and scholars of international conflict a better understanding of how and why states fight over indivisible issues. Hopefully, an improved understanding of dispute duration will provide policymakers with the means of devising strategies to bring long-running disputes to an end.

Although I perform a preliminary analysis of the role of indivisible issues in a state's strategy selection (which can be found in the appendix), future research will need to examine the process in further detail. Specifically, scholars should further explore the intensity and process of how states that are wishing to engage in a strategy of attrition extract resources from its domestic population. I anticipate that this exploration will be best done through two means. The first is by gathering the data needed to operationalize a more fine-grained measure of issue salience. I anticipate that this will best be achieved through a textual analysis of the major newspapers within the relevant states. Specifically, I will generate a continuous variable made up of a count of the number of times the issue was mentioned as well as accounting for the modifiers accompanying the mention of these issues. Not only will this allow for a better understanding of the effects of salience on dispute duration as it will allow for more variation in the main independent variable of interest, but it will also allow for an exploration of what causes the salience of an issue to decrease or increase during the life of a dispute. Further, how does the salience of an issue to either enable or inhibit the ability of a state to employ a strategy of attrition?

The second step I need to take to get at the process by which states engage in a strategy of attrition will require me to obtain a more fine-grained measure of an attrition strategy. The measures I employ in the appendix, as an indicator for as an indicator for the employment of a strategy of attrition are crude and do not entirely get at the strategy of attrition, and more importantly for future research, a more fine-grained measure of attrition will allow me to better

get at the dynamic link between indivisible issue salience and an attrition strategy. More specifically, this measure should be an index or a latent variable that incorporates the proportion of a state's population in the military throughout the duration of the dispute, the percent of the state's GDP the state is expending on the fight, the rate of taxation, and finally, the employment and intensity of military force on the battlefield.

The second major thrust of future research exploring the role of indivisible issues in conflict dynamics needs to pick up where the work started in chapter three of this dissertation ends. Specifically, in this chapter, I explore how states involved in disputes can use issue manipulation to strategic effect. This is an essential step in the study of war as it is a first attempt at exploring how states communicate resolve when they are unable to do so on the battlefield. As I lay out in chapter 3, I anticipate that warring states will use highly salient indivisible issues to signal resolve in instances where the state is highly resolved, but its opponent questions its resolve, they have latent capabilities but are unable to currently signal resolve on the battlefield, and the state has a highly salient indivisible issue available to be placed under dispute. As mentioned in chapter 3, at this time, I am unable to offer a convincing and generalizable test of my theory due to data limitations. However, I do offer an in-depth case study of issue manipulation by Britain during World War I. Since I only test my theory on a single war and within this war, only on one belligerent the findings from this case are not generalizable and only represent a plausibility probe of the theory I develop in this chapter. To better understand the process of issue manipulation, it is essential that future tests and theorization move beyond a plausibility probe and toward sophisticated quantitative analyses.

As mentioned in chapter 3, to further analyze and assess the validity of my theory, I need to collect data for all belligerents across all wars. This will allow me to assess if the variable

(necessary conditions) that I specify have the effect on the likelihood of a state using a highly salient indivisible issue as a signal of resolve, as I would anticipate from the expectations of warring state behavior that I derive from my theory. To do this, it will require that I engage in large-scale data collection which will require multiple people and thousands of hours. Specifically, I need to identify the moments during each war when belligerent states add new issues to those already under dispute. Since I contend that new issues are brought under dispute due to their inclusion by a belligerent state's leaders in a public venue, to collect this data will require that I identify all public speeches and statements made by a warring state's leader across all wars identified by the Interstate War dataset collected by the Correlates of War project from 1816-2007. In order to test my theory, I will also need to gather data that will allow me for a continuous measure of a state's ability to signal resolve on the battlefield across space and time as well as quantitatively identifying instances when a belligerent state's resolve is most likely to be doubted by a state's opponent or allies.

I also intend to extend my theory. I anticipate that my theory can explain a state's wartime behavior beyond what I have applied it to here. Specifically, I anticipate that my theory cannot only explain why the issues a state is disputing over expand over time, but can also be applied to a more in-depth examination of war duration. I anticipate my theory regarding issue manipulation will help to explain wars that deviate from my expectations, more specifically wars that begin over divisible issues but last for an extended period. I also anticipate that my theory will help to explain changes in wartime strategy selection. Specifically, I anticipate that after a highly salient indivisible issue is added to those already under dispute a state will switch from higher intensity strategies intended to reveal information and achieve a quick distribution of the issues to a strategy

of attrition intended to push a state's opponent to the limits of its resolve. I expect that the theory I develop in chapter 3 will also help to explain which side will win or lose a war.

Ultimately, this line of theorization and future research will suggest that wars have asymmetric causality, meaning that the causes that led to the war are not necessarily the reason that the war ends. (Goertz and Mahoney 2012) Most previous scholarship assumes as I did in chapter two and four that the war termination is an endogenous process, or the causes that led to the outbreak of war are the same causes that will bring the war to an end. (Gartzke 1999, Slantchev 2004) While these scholars have made considerable progress in our understanding of the war termination process, they do not fully consider how the wartime political process, both between the disputants as well as between the political leaders and their domestic population, changes the nature of the values of the issues at stake and the available distributions that would end the war. Ultimately, then, understanding the value of the goods under dispute at the time the war broke out does not account for the dynamic nature of the value of these issues and other issues that might be added to the goods being disputed as the conflict process unfolds. Considering the causal asymmetry of war will represent an essential innovation in the study of the warfighting process.

In conclusion, this dissertation has sought to examine the effect that the issues under dispute will have on interstate conflict dynamics and the manner by which they can be manipulated. A better understanding of interstate conflict dynamics is a first step in understanding why some conflicts last longer than others and why some conflicts are more intense and lead to greater human suffering. Through this understanding, policymakers and other interested groups will be better able to devise strategies to bring conflicts to an end.

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APPENDIX A

DIVISIBILITY AND ATTRITION BEHAVIOR

I suggest that there is a relationship between the total divisibility of the issues under dispute and the belligerent's propensity to engage in attrition behavior. Since I am employing a continuous dependent, I employ an ordinary least squares regression model. The results of this analysis can be found in table 2. To fully explore the relationship between my main independent variable and attrition behavior, I operationalize this variable in two different ways. In model 1, I employ the continuous total divisibility variable I devised above. In model 2, I use the dichotomous measure of total divisibility.

Table 5: Ordinary Least Squares Regression on Target Attrition Behavior

	(1)	(2)	(3)	(4)
Primary Independent Variables				
Total Divisibility (Target)	-0.001** (.000)			-0.001 (0.000)
Total Divisibility (Initiator)		0.001** (0.000)	0.002** (0.000)	
Total Divisibility (I) x Low Div (T)			-0.002*** (0.000)	
Total Divisibility (T) x Low Div (I)				0.000 (0.000)
Attrition (Initiator)	0.050 (0.078)			0.087 (0.092)
Attrition (Target)		0.351*** (0.134)	0.141 (0.111)	
Relative Capabilities	0.005 (0.006)	-0.006 (0.009)	-0.005 (0.008)	0.007 (0.008)
Target Regime Type	0.001*** (0.000)	-0.010 (0.007)	-0.123* (0.006)	0.014** (0.007)
Contiguity	0.002** (0.004)	0.003 (0.004)	0.007* (0.003)	0.003 (0.003)
Major Power (Initiator)	0.006* (0.003)	-0.006 (0.003)	-0.001 (0.003)	0.002 (0.003)

	(0.004)	(0.005)	(0.004)	(0.003)
Major Power (Both)	0.006	0.004	0.009	0.008
	(0.006)	(0.006)	(0.007)	(0.006)
Number of States	0.000	0.007	0.004	-0.001
	(0.002)	(0.005)	(0.004)	(0.002)
Constant	0.014**	0.003	-0.009	0.001
	(0.006)	(0.017)	(0.015)	(0.001)
N	109	111	111	110
R ²	.209	.226	0.19	.179

* p<0.10 ** p<0.05 *** p<0.01

In Table 2, I present the results of my ordinary least squares regression analysis on attrition behavior using robust standard errors. As can be seen in the model 1, I find that, all else being held constant the total divisibility of the target has a negative and statistically significant effect, at the 95 percent confidence level, on the proportion of a belligerent's population that is in the military, which I am using as a proxy for a belligerent's use of attrition behavior. Specifically, this finding suggests that for every 1 unit increase in the total divisibility of the target there is -.001 reduction, or .1 percent, of the population that belongs to the military. This finding is in the anticipated direction and adds support to the hypothesis derived from my theory. In addition to my variables of interest, I have found that regime type, contiguity, and major power initiator are statistically significant. Specifically, consistent with previous work, I find that these variables have positive coefficient suggesting that they will have a higher proportion of their population in their military.

In model 2, I run a regression to assess the role that the total divisibility of the initiator has on an initiating state's propensity to employ an attrition strategy. I find that this variable to be statistically significant and positive, the anticipated direction. This suggests that as the total divisibility of the initiator increases, the more willing the initiator will be to engage in attrition behavior.

It is important to note that these findings are found without controlling for the divisibility of the opponent. In models 3 and 4, I interact a dichotomous variable indicating that the issues that the state is disputing over have low total divisibility. I find in model 3, that the interaction between the total divisibility of the target and the dichotomous indicator of the initiators divisibility. I find that as the total divisibility of the increases relative to the target, they become less willing to engage in attrition behavior. This is an interesting finding due to the fact that the sign switched. Indicating, that when an initiator is facing a target that is more than likely to be using attrition behavior, they will also engage in attrition behavior. In model 4, I interact the total divisibility of the target and a dichotomous indicator for the initiator. I find that this it does not have statistically significant effect adding some credibility to the argument that the divisibility of the initiator does not affect the propensity for a target to use attrition behavior.

To provide a clearer picture of the relationship between the target's total divisibility and attrition behavior, I provide graphs of the predicted values across the range of both these variables. As can be seen in the graph on the left, when the total divisibility of the issues that a belligerent is fighting are at their lowest, -13, all else being held at its means, the proportion of a state's population that will be in the military is .026, or 2.6 percent. On the other hand, when total divisibility is at 5, its highest (the values found on the right hand side of the graph) the proportion of the state's population that will belong to the military is .001, or 0.9 percent. The first difference

between these two estimates is .017, or 1.7 percent. Considering that this variable ranges from a proportion of .0007 to .097 these changes are large and add considerably to the evidence suggesting that states fighting over issues with low total divisibility will engage in attrition behavior in order to capture the indivisible issues under dispute.

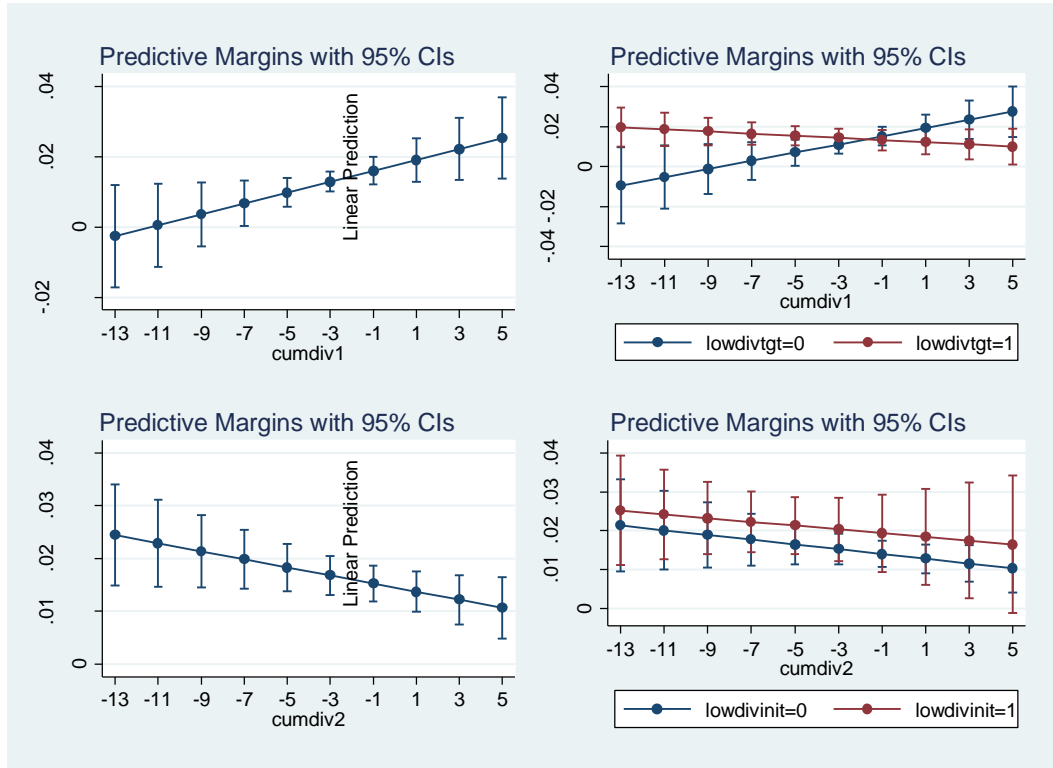


Figure 7: Predicted Values of Attrition Behavior

APPENDIX B

DEFINITIONS FOR EACH ISSUE TYPE

Definitions for Each Issue Type from Holsti (1990)

Protect the Integrity of the State: Wars fought to prevent other states from taking possession of territory that was a part of the state.

Government Composition: Intervention by a foreign power into another state's domestic affairs to ensure that the government composition of a government favored parties that would be more or less sympathetic to them.

National Liberation: Attempts to create a new state out of territory that had previously been part of another territory.

National Unification/consolidation: Attempts by one state to incorporate and consolidate territories belonging to another state that contain ethnic kin.

Ideological Unification: Wars intended to unite territories populated by groups sympathetic to the ideology of the state to the state that possesses that ideology.

Dynastic Succession: A war intended to resolve disputes over the succession of a monarchical throne.

Regional Dominance: Wars that were attempts by one state to establish itself as the dominant political and military power in a region.

Strategic Territory: Wars used to retain pieces of territory whose possession were vital to a state's security problems and subsequently state and regime survival.

Protect Religious Confreres: Wars intended to protect groups of religious minorities within the borders of another state.

Ethnic Unification: Attempts by one state to incorporate or consolidate territories belonging to another state that possess ethnic kin. This is differentiated from national unification as an issue type by the fact that the initial movement comes initially and primarily from the irredentist group abroad.

National Honor: Wars intended to maintain the status or reputation of the state. In order for this to be the case the honor and prestige at stake have to be the primary issue being attacked and the issues that the war was over cannot be of any real vital interest beyond honor.

State/Regime Survival: Wars where one side intends to destroy the state by dismembering it in to constituent parts.

Protect Integrity of the Empire: Attempts to stop one state from acquiring all or some pieces of territory formally held by the target state as an imperial possession.

Secession/Independence: Wars to

Self Determination: War used as a means to help create an ethnically determined nation state out of the constituent parts of empire.

Territory: War used as a means for one state to acquire territory. Note that wars over territorial homelands or imperial possessions would be classified as protect integrity of the state so these wars will almost always be over opportunities for territorial expansion.

Commerce: Wars over trade and influence of trade usually challenging some type of monopoly or attempts to create a monopoly.

Compensation/Reparations: Wars fought over compensations and reparations tied to previous agreements for losses suffered in war or exchanges from some other agreement between the states.

Balance of Power: Wars fought between states over the relative balance of power between them or within a regional or global system.

Enforce Treaty Terms: Wars fought by at least one side to uphold the provisions of a previously signed treaty.

Test of Strength: Wars fought to resolve competing claims as to strength and power.

Empire Creation: Wars fought by one side create an empire, at the expense of other states, when they had not been previously involved in colonial competition.

Colonial Competition: Wars stemming from attempts to expand colonial possessions.

Protect Commercial Interests: Wars to protect commercial interests usually in the form of protecting a monopoly or maintaining preferential trade agreements.

Treaty Obligations: Wars undertaken, usually by third parties, to uphold the provisions of an alliance treaty.

National Security: Wars fought to protect countries from threats or potential threats to a state's ability to defend itself.

Prevent Regional Hegemony: Wars fought in an attempt to keep another state within a regional power system from gaining too much strength relative to the other members of the state.

Preserve Alliance Unity: Wars fought to keep members of an alliance from defecting from the alliance or breaking the terms of the alliance treaty which they signed.

Autonomy: Attempts by a state to gain more policy independence from a state that has previously dominated its domestic and international affairs.

Humanitarian Aid: Interventions in a state to stop the widespread violence perpetrated by the government against members of the opposing state's domestic population.

Protect Domestic Population: Wars over a state's desire to protect members of a state's population, living within the homeland, from impending physical harm by a potentially invading state.

Influence Domestic Legislation: Wars over one state's desire to influence the domestic policy of an opposing state.

Support Ally: War fought in order to support an ally, either intended to uphold treaty obligations or curry favor with the ally.

APPENDIX C

TABLE AND JUSTIFICATIONS FOR DIVISIBLE AND INDIVISIBLE ISSUES

Table 6: Divisible and Indivisible Issues

Divisible Issues	Indivisible Issues
Territory	National Liberation
Commerce	National Unification
Compensation/Reparations	Ideological Unification
Government Composition	Dynastic Succession
Enforce Treaty Terms	Strategic Territory
Test of Strength	Ethnic Unification
Empire Creation	National Honor
Colonial Competition	State Survival
Protect Commercial Interests	Regime Survival
National Security	Balance of Power
Protect Domestic Population	Strategic Territory
Protect Religious Confreres	Prevent Regional Hegemony
Humanitarian Aid	Regional Dominance
Protect Integrity of Empire	Autonomy
Government Composition	
Treaty Obligations	

As mentioned in the primary document whether or not an issue is divisible or indivisible is a function of whether or not it can be divided without losing its value to those that desire to possess it. Specifically, an issue is divisible if it can be distributed without losing its function or if there is not some sharing scheme wherein states will be able to share the issue successfully. Using these

coding rules, I will place each issue identified by Holsti (1990) into the categories of divisible or indivisible. I begin with the divisible issues and then turn the indivisible issues.

Territory: Territory is divisible because any piece of territory that was broken off from the more significant piece of territory under dispute is still functional and possesses value in and of itself. For example, regardless of the division of the territory

Commerce: Commerce can be divided as the routes used to transport goods can be shared through a number of schemes without these routes losing their value to those who seek access to them. For example, states can use the routes simultaneously or switch off which country can use the routes.

Compensation/Repartitions: Compensation and Reparation are divisible. There are an infinite number of divisions of repartitions that would not only make the state seeking compensation better off than if it received nothing and this value will be maintained regardless of whether or not the demanded compensation is increased or decreased.

Empire Creation: Empire creation is divisible because there are not only an infinite number of divisions that would make the state seeking to expand its empire better off. Each addition to the empire will still possess its value regardless of whether or not the state seeking to expand its empire desired more or less of the new territory.

Colonial Competition: The competition over new colonial possessions is also divisible as the territory the two states are competing over can be divided in an infinite number of ways without it losing its value.

Protect Commercial Interests: The protection of commercial interests is divisible because there are a large number of agreements that two states can come to regarding access to commercial markets or routes that will not cause this access to lose its value. For example, if a country were to

allow access to a market during certain times of the year or with a new tariff the commercial interests will still have value to those that desire them.

Government Composition: The composition of the government can be changed without the government losing its value. For example, a specific leader or diplomat could be removed from their post and the government could still have value to those that possess it.

National Security: National Security is divisible as there are a number of different agreements that both sides can reach without the value attached to a state's national security being destroyed. For example, states can agree to move their troops off the border a certain number of miles or remove weapons systems from threatening locations or at a farther distance. Similarly, states can engage in mutual arms reduction without national security being imperiled.

Humanitarian Aid: Humanitarian aid is divisible as there are a wide number of agreements that the states can come to regarding the type and amount of humanitarian aid allowed without all of the value attached to the humanitarian aid being lost.

Treaty Obligations: Treaty obligations are divisible, as there are few treaty obligations that can be considered ironclad. Most treaty provisions can be kept according to the letter of the treaty without complying with the spirit of the treaty. Even in cases after which states have shirked on their obligations in this manner, the treaty will still be of value because the state will be expected to return the favor in a similar manner which will still be of value to the state.

Protect the Integrity of the Empire: The integrity of an empire is divisible. There is an infinite number of agreements that a state can agree that divide up the territory that will still lead to the territory being of value as the territory that remains will still benefit the state.

Balance of Power: The balance of power is indivisible since if the status quo is not maintained or changed, the value attached to the balance of power will be destroyed.

Regional Dominance: Regional Dominance is an indivisible issue as only one state can be dominant, and if a state does not become dominant the value attached to the issues will be lost for the state that is seeking it.

Prevent Regional Hegemony: Preventing regional hegemony is indivisible because any agreement wherein a state allows for a regional hegemon will subsequently mean that the value attached to the issue will be lost for the state that is seeking to prevent a regional hegemon.

National Liberation: National liberation is indivisible as there are no agreements that states can come to short of liberation that will not destroy the value of liberation. For example, more limited colonial oversight in the case of Ireland before its independence, was not acceptable because it would not Ireland to obtain or keep the value associated with national liberation.

National Unification: National unification is indivisible. A state will either be able to bring all of the territory and people it sees as being part of the nation or not. If it does not, it will be unable to capture the value attached to national unification as not all of the territory has been brought into the nation.

Ideological Unification: ideological unification is indivisible. A state will either be able to bring all of the territory and people it sees as being part of its ideology. If it does not, it will be unable to capture the value attached to ideological unification as not all of the territory has been brought into the nation. Any division of the territory with ideological adherents in it that is not captured will destroy the value associated with the issue.

Dynastic Succession: Dynastic succession is indivisible. Only one person can share the throne, and any division of the throne will cause it to lose its value as it cannot be shared.

Strategic territory: Strategic territory is indivisible. If the territory were to be divided, it would lose the strategic value (whatever military advantage it offers the states) which it possesses.

Ethnic Unification: ideological unification is indivisible. A state will either be able to bring all of the territory and people it sees as being part of its ethnicity. If it does not, it will be unable to capture the value attached to ethnic unification as not all of the territory has been brought into the nation. Any division of the territory with ideological adherents in it that is not captured will destroy the value associated with the issue.

National Honor: National honor is indivisible. Since a state's national honor is dependent upon its willingness to stand firm or stay strong in a crisis or war to maintain specific pieces of territory, achieve desired outcomes, or other desired ends. Any agreement short of allowing a state to maintain these possessions will destroy the value attached to the state's national honor as it was based upon these possessions or ability to achieve certain outcomes.

State Survival: State survival is indivisible. If a state fails to survive all of the value attached to the survival of the state will be gone as the state will no longer exist.

Regime Survival: Regime survival is indivisible. If a state fails to survive all of the value attached to the survival of the state will be gone as the regime will no longer exist.

Protect Religious Confreres: Protecting Religious confreres is an indivisible issue as no agreement can be reached short of protecting members of an endangered religious community that will allow the state to keep the values it obtains from protecting members of this religious group.

Protect Domestic Population: protecting a domestic population is indivisible. If a state is unable to protect its domestic population, the value it received from protecting this population will be lost as the government will no longer be seen as viable being able to protect its people and the value the state receives from providing security to its domestic population will be lost.

Autonomy: Autonomy is an indivisible issue. A state cannot come to an agreement short of the right to self-government within a certain sphere without the value attached to achieving autonomy being lost to the state trying to obtain it.

APPENDIX D

NUMBER OF TIMES ISSUES IS PRESENT BETWEEN WARRING STATES

Table 7: Number of Times Issue is Present

Issues	N
Territory	98
Commerce	37
Compensation/Reparations	3
Balance of Power	2
Enforce Treaty Terms	11
Test of Strength	1
Empire Creation	6
Colonial Competition	6
Protect Commercial Interests	
Support Ally	41
Treaty Obligations	3
National Security	1
Prevent Regional Hegemony	2
Preserve Alliance Unity	1
Regional Dominance	15
Protect Domestic Population	1
National Liberation	13
National Unification	12
Ideological Unification	6
Dynastic Succession	2
Strategic Territory	27
Ethnic Unification	4
National Honor	5
State Survival	12
Protect Integrity of Empire	16
Protect Religious Confreres	3
Secession/Independence	0
Regime Survival	3
Self Determination	1
Regional Dominance	15

Autonomy	4
Humanitarian Aid	1
Government Composition	30

APPENDIX E

SALIENCE OF DISPUTED ISSUES

Table 8: Salience of Issues

Salience=1	Salience=2	Salience=3	Salience=4	Salience=5
Protect Integrity of Empire	Balance of Power	Government Composition	National Liberation	Regime Survival
Enforce Treaty Terms	Prevent Regional Hegemony		National Unification	State Survival
Test of Strength	Regional Dominance	Ethnic Unification	Ideological Unification	
Empire Creation	Enforce Domestic Legislation	National Honor	Strategic Territory	
Dynastic Succession	Compensation	Territory	Autonomy	
Colonial Competition		Protect Religious Confreres	National Integrity	
Revise Treaty Terms		Protect Ethnic Confreres	National Consolidation	
Protect Commercial Interests		Liberate Ethnic Confreres	Self Determination	
Support Ally			Protect Domestic Population	
Treaty Obligations			National Security	
Preserve Alliance Unity			Integrity of State	
Humanitarian Aid			Strategic Territory	

APPENDIX F

REFERENCES USED TO UPDATE HOLSTI'S DATA

- Clodfelter, Micheal. 2017. *Warfare and Armed Conflicts: A Statistical Encyclopedia of Casualty and Other Figures, 1492-2015*. McFarland.
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APPENDIX G

PROPORTIONAL HAZARDS TEST TABLE 2, MODELS 1, 2, AND 3

Table 9: Schoenfeld Residuals Test for Model 1

	Rho	Chi2
Total Divisibility (Initiator)	0.087	1.33
Total Divisibility (Target)	-0.025	0.42
Relative Capabilities	-0.069	0.18
Power Shift (5 year lag)	-0.001	0.00
Number of States	-0.034	0.18
Terrain	0.068	0.64
Contiguity	-0.084	1.51
Total Population	0.045	0.32
Total Troops	-0.044	0.62
Democratic Initiator	0.055	0.74
Intensity	0.022	.12
Global Test		4.44

* p<0.10 ** p<0.05 *** p<0.01

In this table I run the phtest to assess whether or not any of my variables in model 1 violate the proportional hazards assumption. I do not find any of the variables to be significant, suggest that none of these variables violate the proportional hazards. Additionally, the global test is not significant, offering further evidence that the proportional hazards assumption has not been violated.

Table 10: Schoenfeld Residuals Test for Model 2

	Rho	Chi2
Total Divisibility (Initiator)	-0.043	.36
Low Div (Target)	-0.081	.67
Total Div (I) x Low Div (T)	0.094	1.15
Relative Capabilities	-0.068	.97
Power Shift (5 year lag)	0.025	.12
Number of States	-0.030	.10
Terrain	0.042	.25
Contiguity	-0.076	1.24

Total Population	0.041	.37
Total Troops	-0.056	1.17
Democratic Initiator	0.063	1.13
Intensity	0.027	.22
Global Test		4.87

* p<0.10 ** p<0.05 *** p<0.01

In this table, I run the phtest to assess whether or not any of my variables in model 2 violate the proportional hazards assumption. I do not find any of the variables to be significant, suggesting that none of the variables I have used to specify my model violate the proportional hazards. Additionally, the global test is not significant, offering further evidence that the proportional hazards assumption has not been violated.

Table 11: Schoenfeld Residuals Test for Model 3

	Rho	Chi2
Total Divisibility (Target)	0.059	.54
Low Div (Initiator)	-0.044	.28
Total Div (T) x Low Div (I)	-0.062	.41
Relative Capabilities	-0.085	.99
Power Shift (5 year lag)	-0.016	.05
Number of States	0.010	.01
Terrain	0.082	.99
Contiguity	-0.052	.62
Total Population	0.013	.04
Total Troops	-0.027	.26
Democratic Initiator	0.059	.82
Intensity	-0.009	.02
Global Test		4.32

* p<0.10 ** p<0.05 *** p<0.01

In this table I run the phtest to assess whether or not any of my variables in model 3, violate the proportional hazards assumption. I do not find any of the variables to be significant, suggest that none of these variables violate the proportional hazards. Additionally, the global test is not significant, offering further evidence that the proportional hazards assumption has not been violated.

APPENDIX H

HISTORICAL WORLD WAR I DATA

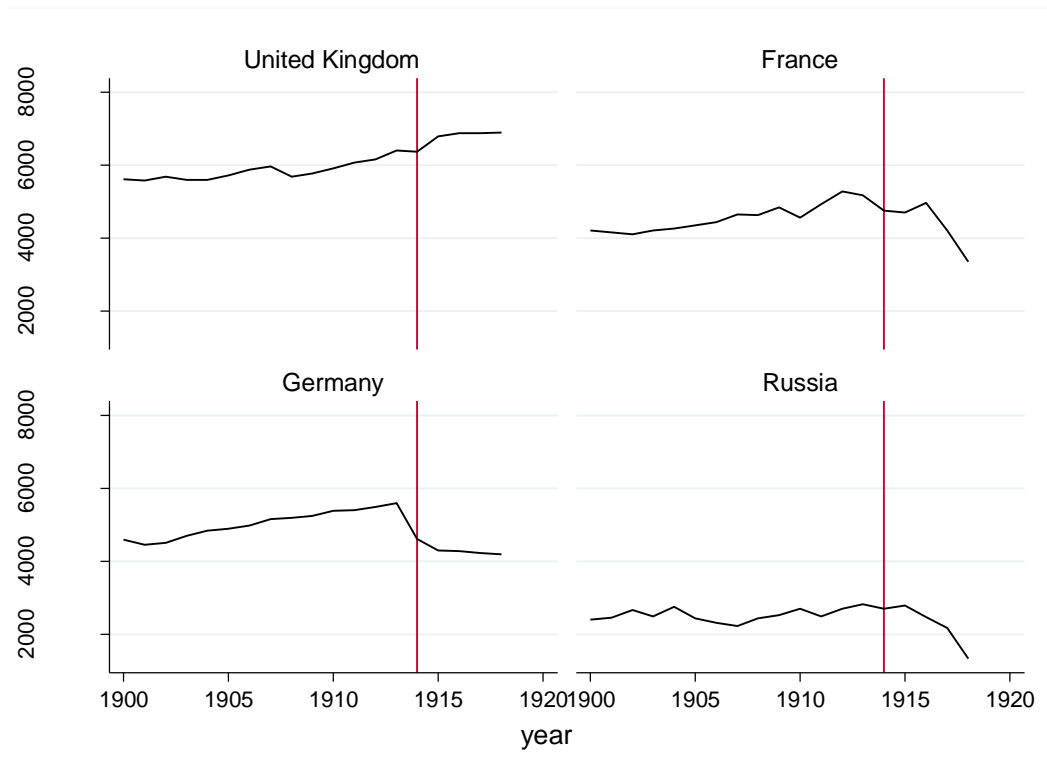


Figure 8: Historical GDP per Capita Data for WWI Belligerents (1900-1918)

The graphs above show the GDP per capita for the United Kingdom, France, Russia and Germany from 1900-1918. A red line signifies each country's GDP in 1914, the first year of the First World War. The data for these graphs is taken from Jutta et. al. (2018). As can be seen in the graphs the United Kingdom had the highest GDP per capita of any of the other major belligerents in 1914. Not only did it have the highest GDP per capita, but it is the only country whose GDP per capita had an upward growth projection at the outbreak of the war. As I argue in the main document, Britain's advantage, relative to its opponents, suggests that it had vast amounts of latent military

potential, as it could turn its latent capabilities into realized power at some point in the future. Interestingly, Britain is the only state whose GDP per capita continued to grow throughout the war, suggesting that even in 1918, the last year of the war, it continued to have higher levels of latent capabilities relative to its opponents.

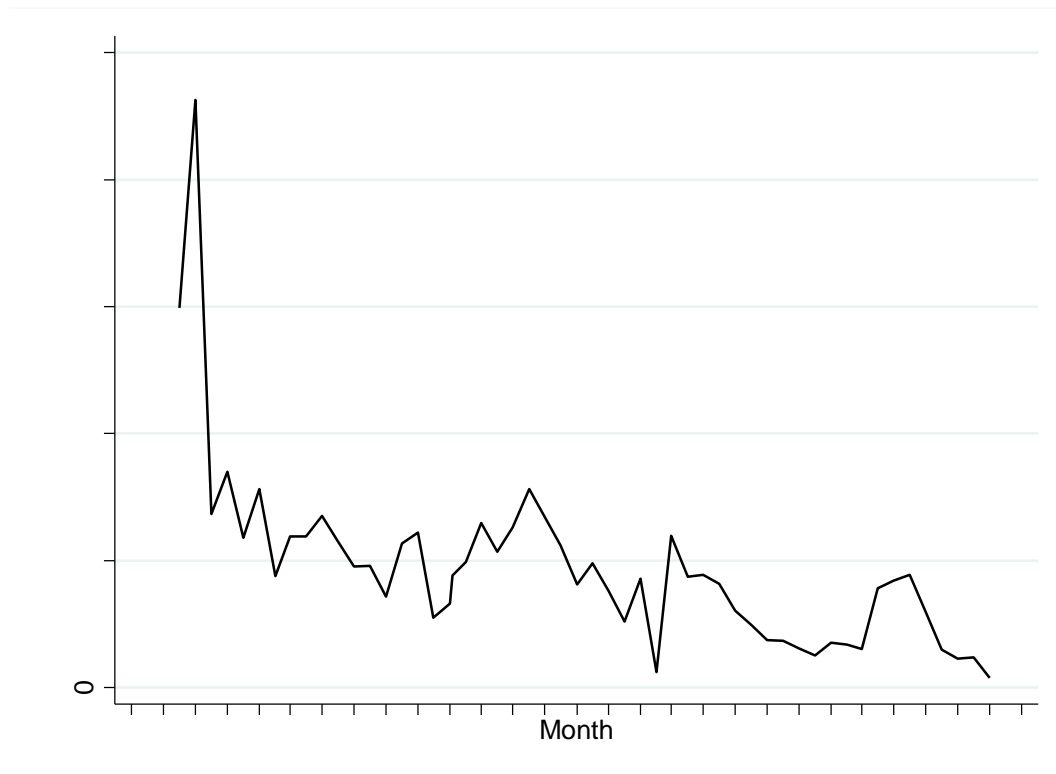


Figure 9: Monthly Enlistments (August 1914-November 1918)

The graph above shows monthly enlistment numbers. As can be seen, at the outset of the war, enlistments reached levels that they would not return to throughout the remainder of the war. However, in the early months of the war, these numbers dropped dramatically and never again came close to achieving the levels it had reached in those early points in the war. This dramatic drop shows not only how the realities of the war dampened enthusiasm for military service among the working class and the subsequent negative affect this had on enlistment numbers but the balancing act between industrial war production and man power on the battlefield. British policy

makers could not pull men out of the economy without affecting industrial output, something that policy makers consistently worried about, closely following statistics surrounding these concerns (WO 394/20).

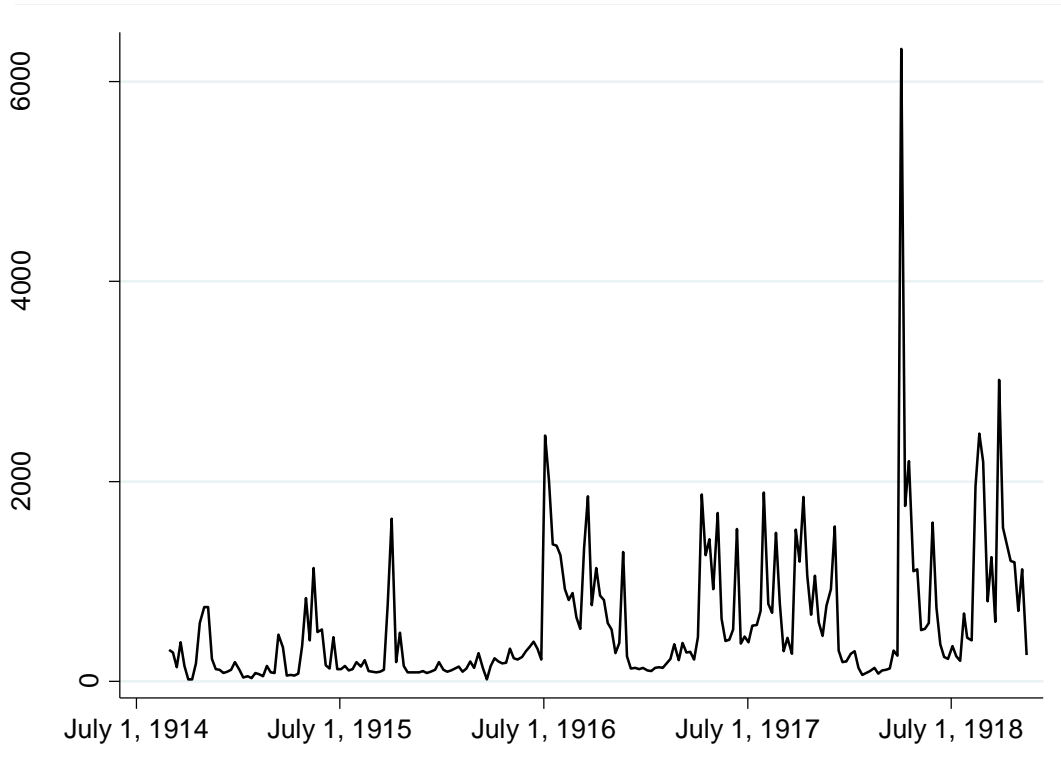


Figure 10: Weekly British Officer Casualties

The graph in Appendix B, found above, shows weekly officer casualties for great Britain from the outbreak of the war in August 1914 to the end of the war in November 1918. As can be seen in the weeks immediately leading up to Lloyd George’s speech on January 4, 1918, Britain suffered the higher rates of casualties than they had suffered during any other period of the war. Also of interest, is the relative large spike—at least compared to the pre-war expectations and its experience leading up to this point—in mid-September 1914. As mentioned in the main document, recruiting numbers dropped precipitously after this first spike in casualties lead Britain to send a highly salient indivisible issue at the end of September 1914.

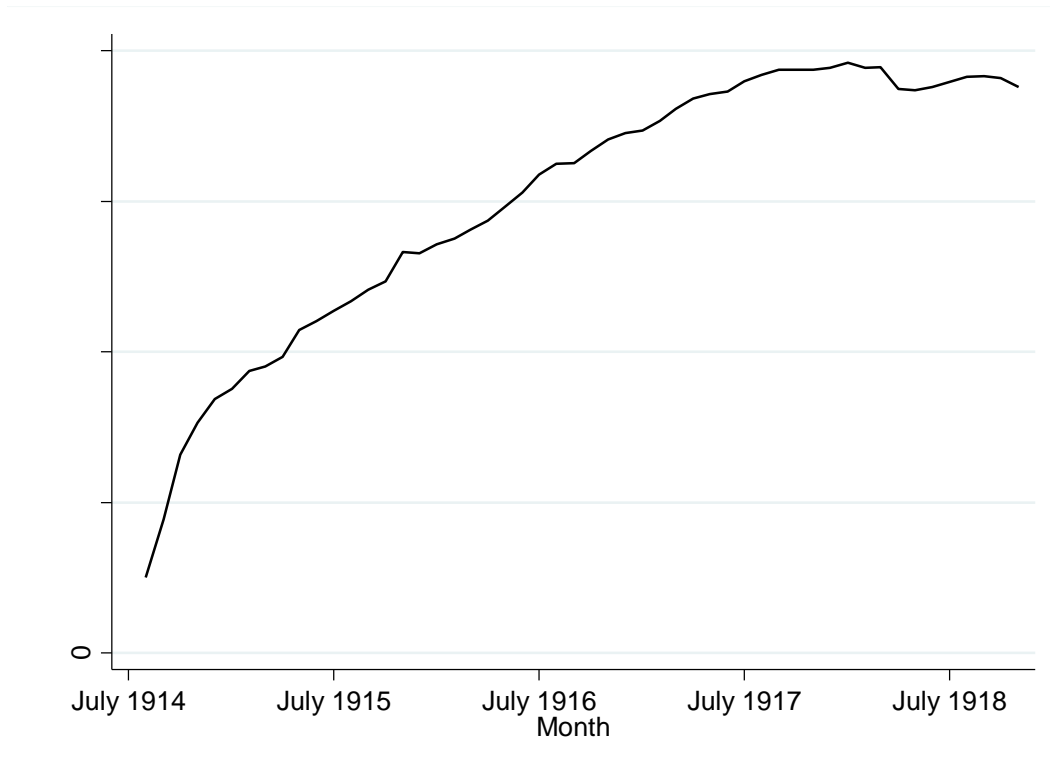


Figure 11: Size of Army from August 1914-November 1918

The graph in above shows the growth of the British army across all ranks and all specializations for all months from the start of the war in August 1914 to the end of the war in November 1918 with data for the graph taken from WO 394/20. As can be seen in the first years of the war Britain ramped up from a relatively small Army of around 500,000 to an army of just under 2,000,000. While this is a rather large increase in absolute terms, the British Army was still small relative to its continental peers. As can be seen during the time after the opening months of the war, the army continued to grow at a fairly rapid rate. However, beginning in 1917, this growth began to level off and the size of the army decreased in the beginning of 1918. This suggests, as I argued above, that when states have the capabilities to signal their resolve on the battle field they will not signal by means of highly salient indivisible issues. As this ability decreases, the incentive grows and the

likelihood of a state using an indivisible issue as a means of signaling, granted the other two necessary conditions are present, increases as a state loses the ability to signal its resolve on the battlefield.

APPENDIX I

EFFECT OF INTANGIBLY SALIENT VALUES ON ATTRITION BEHAVIOR

In these appendices, I seek to assess the effect that the intangible salience of the challenger and the target have on strategy by which states will choose to attempt to end their disputes. Specifically, how intangible salience effects the intensity and likelihood of a state engaging in a strategy of attrition. As mentioned in the main body of this document, I anticipate that as the salience intangible values attached to a territory increase the more likely the state will be to engage in a strategy of attrition. I suspect that this will be done through an increase in low-level military conflict or in attempts at peaceful dispute resolution.

I first seek to assess the number of peaceful attempts at dispute resolution that the competing states undertook. To operationalize this variable, I use a count of the number of peaceful attempts that the states undertook during the duration of the dispute. The data for this variable is taken from the full ICOW data set. The data for this variable covers Western Europe and the Americas from 1816-2001 leaving me with 186 observations. This variable has a minimum of 0 and a maximum of 55 with a mean of 5.322 and a standard deviation of 7.315. I also seek to assess the intensity with which peaceful attempts at dispute resolution were attempted. To operationalize this variable, I take the number of peaceful attempts over the duration of the the dispute divided by the number of years that the dispute lasted (the number of years is found by dividing the total number of days by 365). This variable has a minimum value of 0 and a maximum value of 11.774 with a standard deviation of 1.500.

I seek to assess the effect that the possession of various values of intangible salience by the target and the challenger will have on states using violent means to resolve their disputes. I first use a dependent variable that is a count of the number of militarized interstate disputes (MIDs) that occurred during the duration of the territorial dispute, as identified by ICOW. This variable has a minimum value of 0 and a maximum value of 29 with a mean of 2.643 and a standard deviation of 2.643. I also seek to assess the effects that the intangible salience of the target and the challenger have on the intensity with which the states seek to capture the disputed territory through military. To operationalize this dependent variable, I take the number of MIDs and divide it by the number of years (the number of years is identified by taking the number of days and dividing it by 365). This variable ranges from 0 to 12.166 with a mean of .27 and a standard deviation of 1.012. I also seek to assess the effect that the intangible salience of the target and the challenger have on the disputing state's reliance on war as a means of resolving their territorial disputes. To operationalize this dependent variable, I use a count of the number of wars that occurred during the duration of a territorial dispute, with a war being defined as military conflict wherein 1,000 or more battlefield deaths occurred. This variable ranges from 0 to 4, with a mean of .174 and a standard deviation of .438.

To test if my specified causal mechanisms are operating as I anticipated, I employ a series of count models on the number of attempts to settle the dispute peacefully, the number of MIDs, the rate of MID per year, and the count of wars. Because I am trying to assess the effect of my main independent variable on a count of the number of attempts at a peaceful dispute resolution, I use a negative binomial regression model. A negative binomial regression is advantageous, relative to poisson models, in instances where the count data is over dispersed, as is the case with the

number of peaceful attempts as well as the number of MIDs and Wars. The results from this analysis can be found in table 3 below.

Table 12: Negative Binomial Regressions (Robust Errors)

	(1) (Number of Peaceful Attempts)	(2) (Number of Peace/Year)	(2) (Number of MIDs)	(3) (MIDs/Year)	(4) (Number of Wars)
Intangible Sal (Chal)	0.183** (0.089)	0.223* (0.126)	0.149** (0.079)	0.064 (0.109)	-0.105 (0.098)
Intangible Sal (Target)	-0.033 (0.079)	-0.242* (0.148)	0.468*** (0.156)	0.543*** (0.144)	0.633*** (0.156)
Tangible Sal (Dyad)	0.226*** (0.036)	0.131*** (0.045)	0.131*** (0.041)	0.100 (0.065)	0.279*** (0.060)
Relative Cap (average)	0.208 (0.197)	1.005** (0.387)	0.317 (0.271)	0.691* (0.299)	-0.199 (0.254)
Joint Dem (average)	0.232** (0.170)	0.211 (0.244)	-0.521** (0.142)	-0.145 (0.262)	-0.933** (0.399)
(ln) Days	0.516*** (0.046)	-0.494*** (0.075)	0.452*** (0.067)	-0.450*** (0.071)	0.041 (0.042)
Observations	185	185	826	826	826
Log-likelihood	-441.805	-146.443	-4083.554	-441.265	-371.622

* p<0.10 ** p<0.05 ***
p<0.01

In model 1, I assess the effect that the intangible salience of the challenger and the target have on the count of peaceful dispute resolution attempts. Consistent with the relationship I specify in hypotheses 2 and 2a, I find a positive and statistically significant relationship between the intangible salience of the challenger and the number of peaceful dispute resolutions. This means that as the intangible salience of the challenger increases the number of attempted peaceful dispute resolution also increases. Although the coefficient for the intangible salience of the target is negative, the hypothesized direction, it does not reach standard levels of statistical significance. In model 2, I use a measure of peace attempts per year to get at the intensity with which the states are engaging in such attempts at dispute resolution. As specified in hypothesis 2, I find that the

intangible salience of the challenger increases, the number of attempts at a peaceful resolution in a given year also increase. I also find, as expected, that as the intangible salience of the target increases, the number of peaceful attempts per year decreases. Both of these findings suggest that as the intangible salience of the challenger increases the more likely the challenger will be to engage in a strategy of attrition, seeking to draw out the conflict and hoping to bring the target to the limits of its resolve. Since negative binomial regressions are a maximum likelihood model, the size of the coefficients are not directly interpretable without further analysis. In order to assess the size of the effects, I provide the predicted counts for each the values of my covariates of interest in models 1 and 2.

Table 13: Predicted Counts of the Challenger’s Intangible Salience on Number of Peace Attempts

	(1) (Number of Peaceful Attempts)	(2) (Number of Peace/Year)
Intangible Salience Challenger =0	3.764*** (0.517)	0.498*** (0.170)
Intangible Salience Challenger =1	4.520*** (0.342)	0.623*** (0.160)
Intangible Salience Challenger =2	5.429*** (0.394)	0.778*** (0.171)
Intangible Salience Challenger =3	6.521*** (0.863)	0.973*** (0.243)

* p<0.10 ** p<0.05 *** p<0.01

As can be seen in column 1, when the intangible salience of the challenger equals zero the expected number of peaceful attempts during the life of the territorial dispute is 3.764. As the intangible salience increases, the expected number of peaceful attempts also increases to 6.521. Between the lowest value of intangible salience and the highest value of intangible salience there is difference of 2.775 more peaceful attempts. A similar pattern can be observed in column 2.

When the intangible salience of the challenger is 0, it is expected that the challenger will engage in 0.498 peaceful attempts per year. However, at the highest level of intangible salience, it is anticipated that the challenger will engage in .973 attempts per year. From the minimum to the maximum values of the challengers' intangible salience there is a difference of .475 attempts per year (or nearly half an attempt a year) at a peaceful resolution. The size of these effects is large and offer considerable evidence for my assertion that as the intangible salience of the challenger increases, the more likely the challenger is to engage in a strategy of attrition in this case by keeping the dispute alive through attempts at a peace settlement.

It should be noted that the coefficients for both tangible salience, days, and joint democracy are all positive and significant in models 1 and 2. These are the anticipated results and suggest that as these values increase the higher the count of attempts at peaceful dispute resolutions.

I now turn to assess the effects of the intangible salience of the target and the challenger on militarized actions. When the challenger's intangible salience is high, I anticipate that the number of MIDs will increase the higher the intangible salience, but that the intensity of military action will not be of high intensity. On the other hand, I anticipate that as the intangible salience of the target increases that both the number of MIDs will increase along with the intensity. As can be seen in model 4, the coefficients for both the intangible salience of the challenger and the target are positive and statistically significant. This suggests that as the intangible salience increases for the challenger the number of MIDs that will occur during the lifetime of the dispute will increase. Both of these findings are in the direction that I hypothesized. In model 4, I find that the intangible salience of the challenger does not have a statistically significant effect on the intensity (number of MIDs/year) of the militarized aspects of the dispute. While I do not find the anticipated effect that as the intangible salience of the challenger increased the intensity would decrease, I do find

that the effect is indistinguishable from zero. I do, find, as expected, that as the intangible salience of the target increases, the military intensity of the dispute also increases.

In model 5, I seek to assess the effect that the intangible salience of the challenger and the target will have on the number wars within a given dispute. I find that the intangible salience of the challenger does not have a statistically significant effect on the number of wars, but that the intangible salience of the target, as expected, has a positive and statistically significant effect on the number of wars. These findings are in line with my theory, but without knowing the size of the effects it is difficult to the strength with which these findings support my theory. As with the previous binomial regression models, I will provide predicted counts for each of the models.

Table 14: Predicted Values of the Challenger’s and Target’s Intangible Salience on MIDs and Wars

	(1) (Number of MIDs)	(2) (MIDs/Year)	(3) (Number of Wars)
Challenger			
Intangible Salience, Challenger =0	0.804*** (0.113)		
Intangible Salience, Challenger =1	0.933*** (0.081)		
Intangible Salience, Challenger =2	1.084*** (0.075)		
Intangible Salience, Challenger =3	1.258*** (0.863)		
Target			
Intangible Salience, Target=0	0.376*** (0.084)	0.085** (0.034)	0.041*** (0.015)
Intangible Salience, Target=1	0.601*** (0.080)	0.147*** (0.042)	0.077*** (0.017)
Intangible Salience, Target=2	0.961*** (0.068)	0.253*** (0.052)	0.146*** (0.015)
Intangible Salience, Target=3	1.535*** (0.163)	0.436*** (0.091)	0.276*** (0.036)

In column 1, I provide the predicted counts for the number of MIDs. Holding all other variables at their means, I find that when the intangible salience of the challenger is at its lowest point, there will be .804 wars. On the other hand, when the intangible salience of the challenger is at its highest level, 3, the predicted number of MIDs is 1.258 during the life of the dispute. From the maximum to the minimum there is an increase of .454 MIDs. This is in line with my theory, as I expect that as the intangible salience of the challenger increases it will have incentives to keep the dispute alive through the periodic employment of low levels of force. I also find that as the intangible salience of the target increases the predicted number of MIDs also increases. At the lowest value of the target's intangible salience 0, the predicted number of MIDs, holding all other variables at their means, is .376 MIDs while when the intangible salience of the target is at its highest level, 3, there is a predicted 1.535 MIDs. From the lowest to the highest level of the target's intangible salience there is a difference of 1.159 MIDs or a 308.24 percent change in the number of MIDs. This is strong evidence in support of hypothesis ## and suggests that as predicted, as the intangible salience of the target increases the militarization of the dispute will also increase as the challenger will find it increasingly difficult to find values to offset the value of the intangible values. In column 2, I assess the effect the target's intangible salience has on the number of MIDs per year. I find, holding all other variables at their means that at the lowest level of salience there is a predicted count of .085 MIDs, while at the highest level of intangible salience there is a predicted count of .436 MIDs per year. This is a difference of .351 MIDs per year or a 412.94 percent increase in the number of MIDs per year. This is strong evidence in favor of my theory and further suggests that as the intangible value of the target increases, the challenger will have incentives to use military force to either achieve a military victory or resolve the information problem and force a concession from the target.

I next turn to a discussion of the predicted counts of the intangible salience of the challenger on the number of wars that occur during a dispute. At the lowest level of the target's intangible salience there is a predicted count of .041 wars while at the highest level there is a predicted count of .276 wars, a 573.17 percent increase in the number of wars. These predicted counts are further evidence of my theory. Specifically, it provides further evidence that as the intangible salience of the target increases, the more difficult it will become for the challenger to find a value to compensate the target for the intangible values attached to the territory. Because they are unable to do this they will resort to the employment of military force to either achieve a victory that captures all of the disputed territory or forces a concession from the territory equivalent to the values the challenger attached to the issue.

APPENDIX J

PROPORTIONAL HAZARDS TESTS FOR CHAPTER 4

Table 15: Schoenfeld Residuals for Model 1

	Rho	Chi2
Intangible Saliency(Challenger)	0.004	0.01
Intangible Saliency(Target)	-0.041	1.34
Tangible Saliency	0.003	0.01
Relative Capabilities	0.045	1.54
Joint Democracy	0.015	0.14
War	-0.028	0.64
Post-World War II	-0.004	0.55
Global Test		12.20

* $p < 0.10$ ** $p < 0.05$ *** $p < 0.01$

To test the proportional hazards assumption that underlies the Cox proportional hazards model I employ in the empirical analyses of my hypotheses in Chapter three of this dissertation I perform a Schoenfeld residuals analysis. This test will provide evidence either in support or against the assertion that the variables I have used to specify my model do not violate the proportional hazards assumption. In table 1, I report the results for model 1 of Chapter 3. I find that the results for this test are statistically insignificant across all of the variables use to specify my model. This suggests that none of these variables violate the proportional hazards assumption. I also found the results for the global test to be statistically insignificant, suggesting that the model overall does not violate the proportional hazards assumption.

Table 16: Schoenfeld Residuals Model 2

	Rho	Chi2
Intangible Salience=1(Challenger)	-0.013	0.11
Intangible Salience=2(Challenger)	-0.000	0.00
Intangible Salience=3(Challenger)	-0.004	0.00
Intangible Salience=1(Target)	-0.029	0.60
Intangible Salience=2(Target)	-0.028	0.55
Intangible Salience=3(Target)	-0.034	1.17
Tangible Salience	0.010	0.08
Relative Capabilities	0.053	2.13
Joint Democracy	0.026	0.45
War	-0.023	0.42
Post-World War II	-0.026	0.55
Global Test		12.20

* p<0.10 ** p<0.05 *** p<0.01

In table 2, I report the results for model 2 of Chapter 3. I find that the results for this test are statistically insignificant across all of the variables use to specify my model. This suggests that none of these variables violate the proportional hazards assumption. I also found the results for the global test to be statistically insignificant, suggesting that the model overall does not violate the proportional hazards assumption.